NEXCOM International Co., Ltd.

Industrial Computing Solutions

Fanless Computer

NISE 2300

User Manual

NEXCOM International Co., Ltd.
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Contents

Preface

Copyright iv
Disclaimer iv
Acknowledgements iv
Regulatory Compliance Statements iv
Declaration of Conformity iv
RoHS Compliance v
Warranty and RMA vi
Safety Information viii
Installation Recommendations viii
Safety Precautions ix
Technical Support and Assistance x
Conventions Used in this Manual x
Global Service Contact Information xi
Package Contents xiii
Ordering Information xiv

Chapter 1: Product Introduction

Overview 1
Key Features 1
Hardware Specifications 2
Knowing Your NISE 2300 3
Mechanical Dimensions 5
NISE 2300 5
NISE 2310/ NISE 2310E 6

Chapter 2: Jumpers and Connectors

Before You Begin 7
Precautions 7
Jumper Settings 8
Locations of the Jumpers and Connectors for NISB 2300 9
Jumpers 11
RTC Clear 11
Connector Pin Definitions 12
External I/O Interfaces – Front Panel 12
USB 2.0 12
COM1 and COM2 Connector 12
GPIO 13
SIM Card Connector 14
CFast Connector 14
Audio Connectors 15
Power Switch 15
LAN1/LAN2/LAN3/LAN4 Link/Active LEDs 16
External I/O Interfaces – Rear Panel 17
9~36V DC Power Input 17
DVI-I Connector 17
DVI-D Connector 18
LAN1 and LAN3 Ports 18
LAN2 and LAN4 Ports 19
USB3 and USB4 Ports 20
USB1 and USB2 Ports 21
COM3 and COM4 Ports 21

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Internal Connectors 23
Mini-PCIe Connector 23
3.5G Line-out Pin Header 24
3.5G Mic-in Pin Header 24
Line-in Pin Header 25
SATA1 Connector 25
SATA1 Power Connector 26
SATA2 Connector 26
SATA2 Power Connector 27
FAN1 Connector 27
FAN2 Connector 28
GPIO Pin Header 28
GPS Connector 29
Print Box Header 29
PWR_BT/RET_BT/LED Pin Header 30
SMBUS/LAN1/2/3/4 LED Pin Header 30
USB Internal Connector 31
POE Connector 31
PCI Connector 32
PCIe x4 34

Chapter 3: System Setup

Removing the Chassis Bottom Cover 35
Installing a SATA Hard Drive 36
Installing a SATA Hard Drive for NISE 2210/2310/2210E/2310E 38
Installing a SATA DOM 40
Remove the Chassis Top Cover 42
Installing a SO-DIMM 43
Installing a Wireless LAN Module (half-size) 44
Installing a 3.5G Module (full size) 45
Installing a GPS Module 46
Installing Antenna 48
Installing the SIM Card 50
Installing a CFast Card 51
Wallmount Brackets 52

Chapter 4: BIOS Setup

About BIOS Setup 53
When to Configure the BIOS 53
Default Configuration 54
Entering Setup 54
Legends 54
BIOS Setup Utility 56
Main 56
Advanced 58
Chipset 77
Boot 84
Security 89
Save & Exit 89

Appendix A: GPI/O Programming Guide 91

Appendix B: Watchdog Timer 92

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Preface

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Acknowledgements

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Regulatory Compliance Statements

This section provides the FCC compliance statement for Class B devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

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RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2006 will be RoHS compliant. They will use the usual NEXCOM naming convention.

Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

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Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

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Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

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Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

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Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

Warning:
Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NISE 2300 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	4NCPF00204X00	Terminal Blocks 2P Phoenix Contact	1
2	50311C0006X00	(H)I Head Screw Long	2
3	50311F0326X00	Flat Head Screw Long	4
4	60177A0284X00	(N)NISB2300 Quick Reference Guide	1
5	602DCD0535X00	(N)NISE2200 CD Driver	1

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Ordering Information

The following information below provides ordering information for NISE 2300.

- **Barebone**
  - NISE 2300 10J00230000X0
    3rd Generation Intel® Core™ i5/i3 Fanless System
  - NISE 2310 10J00231000X0
    3rd Generation Intel® Core™ i5/i3 Fanless System with one PCI Expansion
  - NISE 2310E 10J00231001X0
    3rd Generation Intel® Core™ i5/i3 Fanless System with one PCIex1 Expansion

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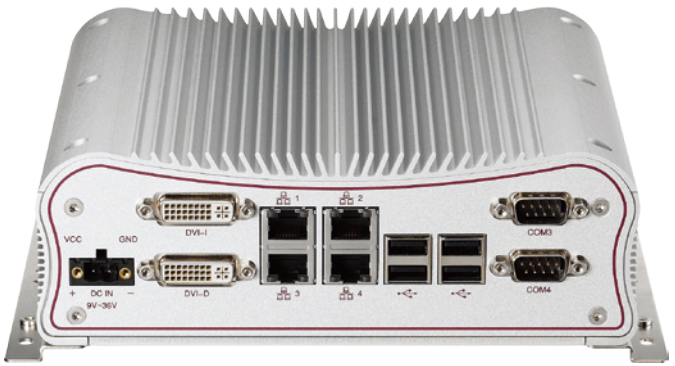
Chapter 1: Product Introduction

Overview



Key Features

- On-board Intel® Atom™ Dual Core D2550 processor 1.86 GHz
- Intel® 82801JIR ICH10 RAID
- 1x DVI-I & 1x DVI-D display output
- 4x Intel® 82574IT GbE LAN ports
- 4x COM ports: 2x RS-232/422/485 w/ isolation protection; 2x RS-232/422/485 w/o isolation protection
- 1x DB15 GPIO connector
- 6x USB2.0; 1x external CFast socket; 1x SIM card socket
- 1x internal mini-PCIe with two antenna holes
- Support 9-36V DC input
- Support ATX power mode, WoL, LAN Teaming and PXE function

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Hardware Specifications

CPU Support

- On-board Intel® Atom™ Dual Core D2550 processor, 1.86GHz, 1M L2 cache
- Intel® 82801JIR ICH10 RAID

Main Memory

- 2x DDR3 SO-DIMM sockets, support up to 4G DDR3-800/1066/1333MHz SDRAM, un-buffered and non-ECC

I/O Interface-Front

- ATX Power on/off switch
- HDD access/ power status LEDs
- 2x RS-232/422/485 w/ isolation protection
- 2x USB2.0
- 1x DB15 GPIO connector
- Audio Jack (line-out & mic-in)
- SIM card socket
- CFast socket
- 2x antenna holes

I/O Interface-Rear

- 1x 2-pin DC input, Support 9-36V DC input
- 1x DVI-I
- 1x DVI-D
- 4x Intel® 82574IT GbE LAN ports
- 4x USB2.0
- 2x RS-232/422/485

Device

- 1x 2.5" SATA HDD driver bay
- 1x External CFast socket
- 1x External SIM card socket
- 1x Internal mini-PCIe socket (optional WiFi or 3.5G module, auto detection)

Power Requirements

- Support 9-36V DV input
- Optional 19V, 65W power adapter

Dimensions

- 195mm (W) x 200mm (D) x 65mm (H) (7.7" x 7.9" x 2.6")

Construction

- Aluminum Chassis with fanless design

Environment

- Operating temperature:
  Ambient with air flow: -20°C to 65°C
- Storage temperature: -20°C to 85°C
- Relative humidity: 10% to 93% (Non-condensing)
- Shock protection: 20G, half sine, 11ms, IEC60068-2-27
- Vibration protection
  - Random: 0.5Grms @ 5~500 Hz according to IEC60068-2-64
  - Sinusoidal: 0.5Grms @ 5~500 Hz according to IEC60068-2-6

Certifications

- CE approval
- FCC Class A

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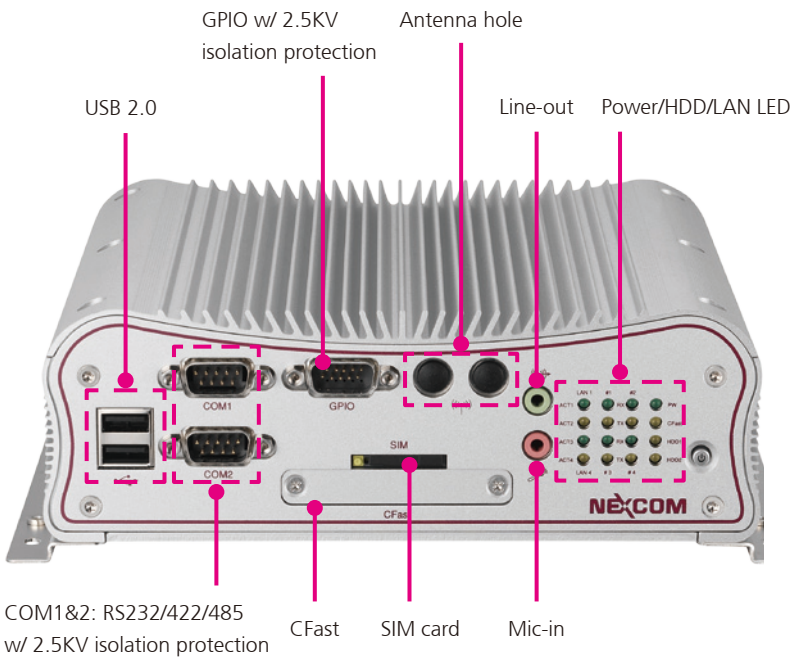
Knowing Your NISE 2300

Front Panel



USB2.0 Ports

Two USB2.0 ports to connect the system with USB2.0/1.1 devices.

COM1 and COM2 RS232/RS422/RS485

Used to connect RS232/422/485 compatible serial devices (with 2.5 KV isolation protection).

GPIO

The GPIO connector supports 4 digital input and 4 digital output (with 2.5 KV isolation protection).

CFast

Used to insert a CFast card.

SIM Card

Used to insert a SIM card.

Antenna Hole

Empty antenna holes reserved for installing optional Mini-PCIe Wi-Fi module.

Line-out

Line-out jack to connect speakers or headphones.

Mic-in

Mic-in jack to connect microphones.

Power/HDD/LAN LED

Indicates the power status of the system, hard drive and LAN activity.

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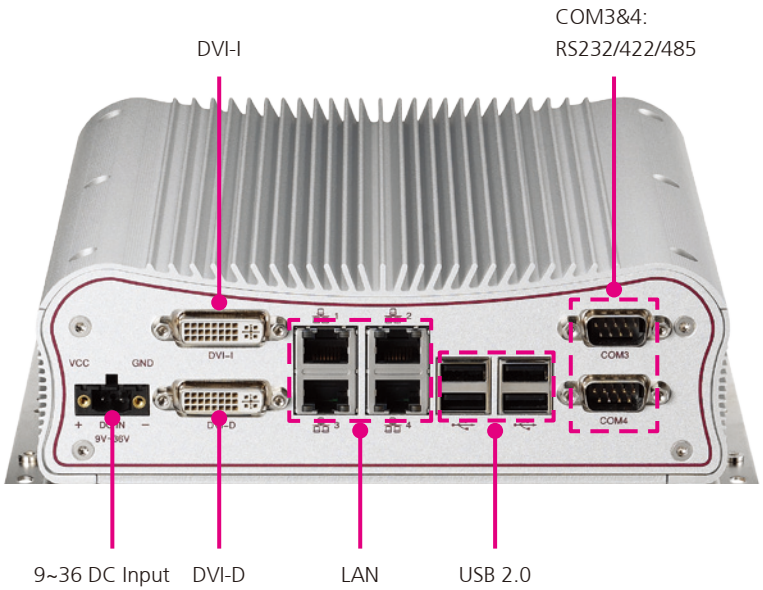
Rear Panel



9~36V DC Input

Used to plug a DC power cord.

DVI-I and DVI-D

Used to connect a digital LCD panel.

Gigabit LAN Ports

Four Gigabit LAN ports to connect the system to a local area network.

USB2.0 Ports

Four USB2.0 ports to connect the system with USB2.0/1.1 devices.

COM3 and COM4 RS232/RS422/RS485

Used to connect RS232/422/485 compatible serial devices.

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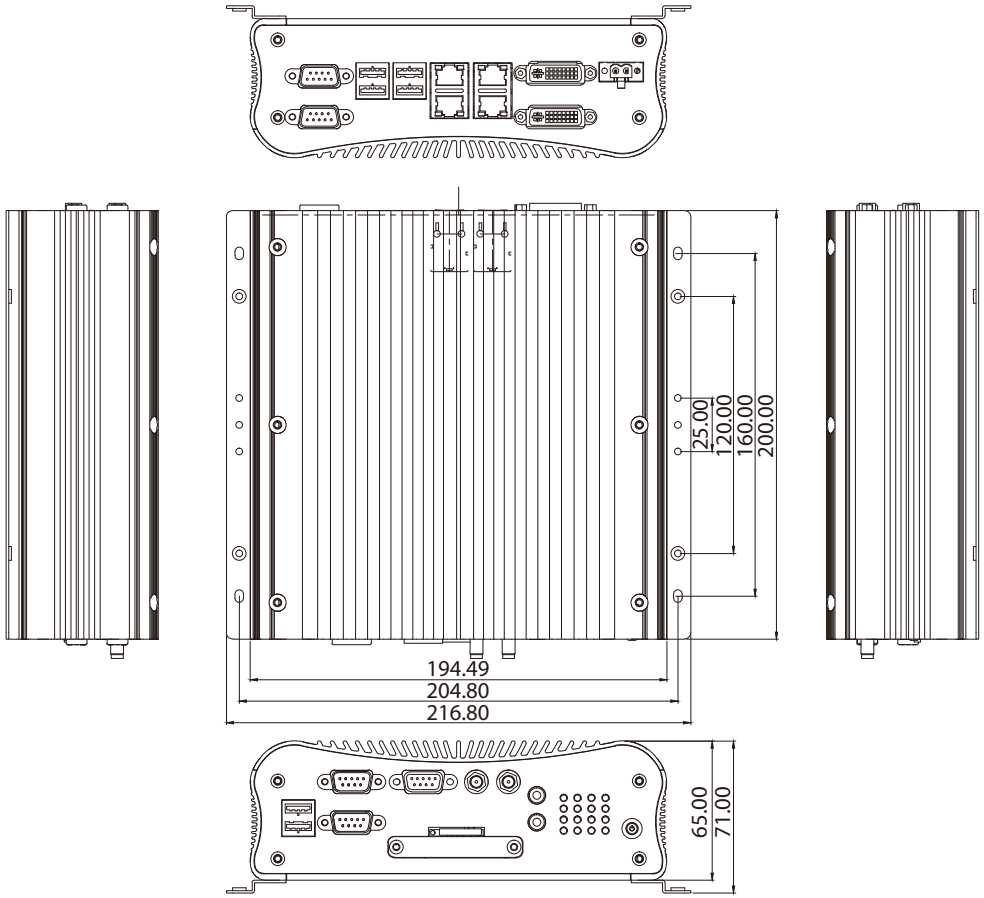
Mechanical Dimensions

NISE 2300



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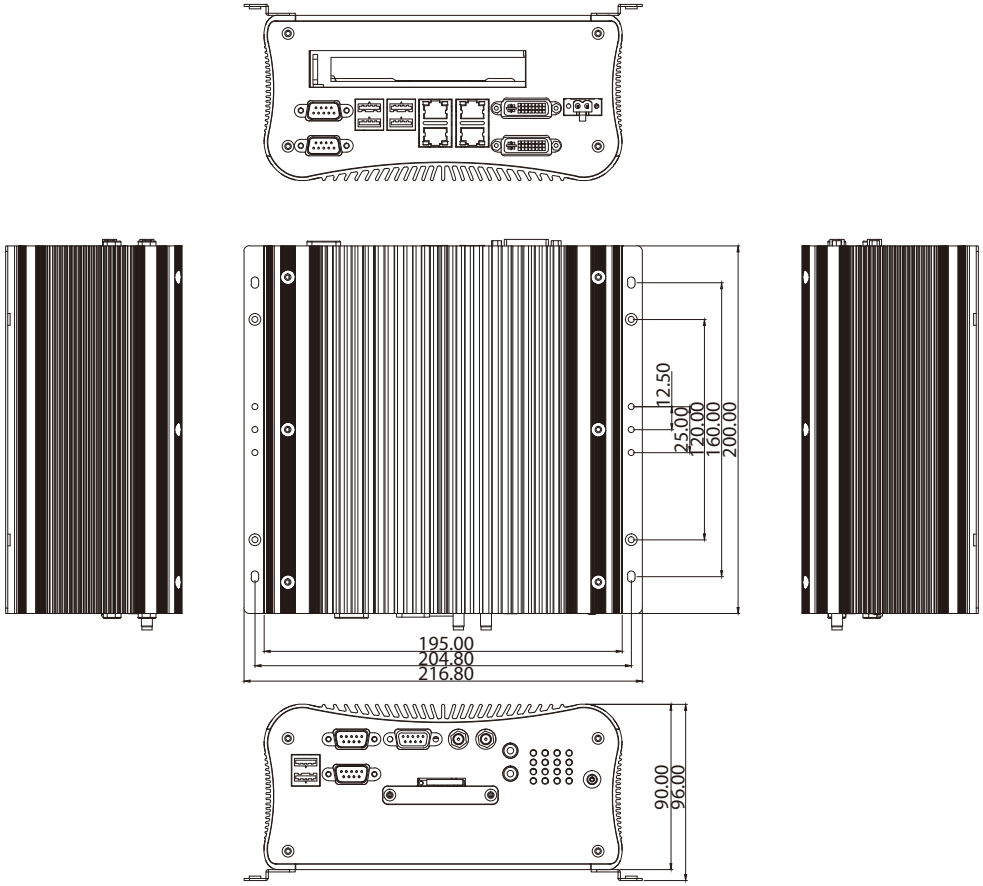
NISE 2310/ NISE 2310E



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Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NISE 2300 motherboard.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

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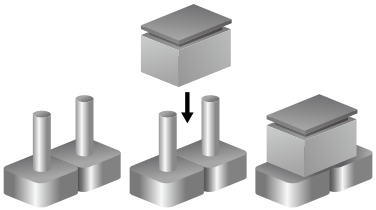
Jumper Settings

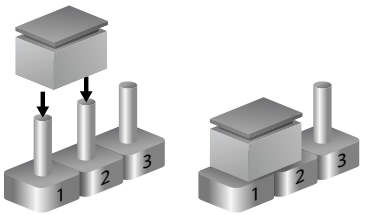
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is open.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)



Three-Pin Jumpers: Pins 1 and 2 are Short



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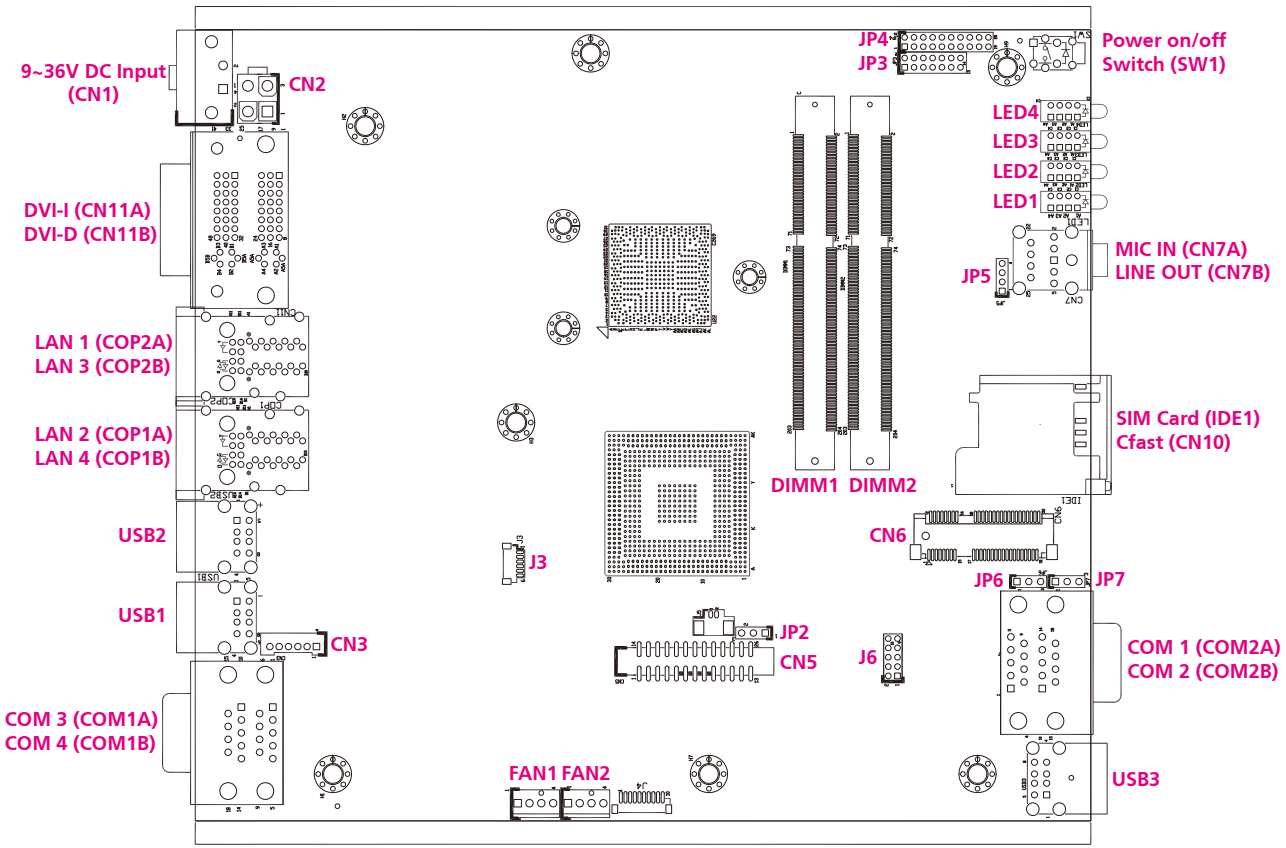
Locations of the Jumpers and Connectors for NISB 2300

The figure below shows the location of the jumpers and connectors.

Top View



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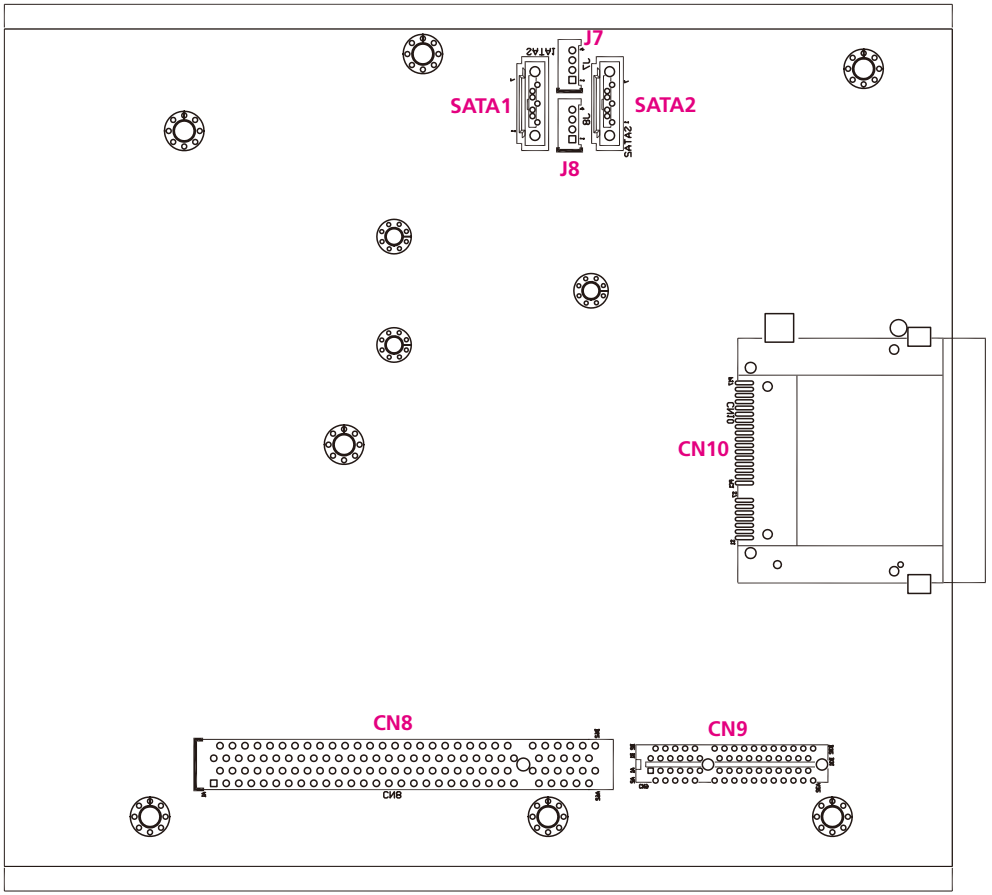
Bottom View



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Jumpers

RTC Clear

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP2

Pin	Settings
1-2 On	Normal
2-3 On	Clear BIOS

1-2 On: default

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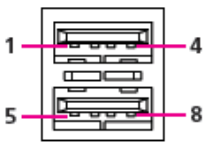
Connector Pin Definitions

External I/O Interfaces – Front Panel

USB 2.0

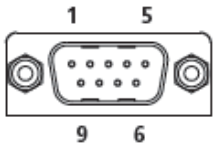
Connector type: Dual USB port, Type A
Connector location: USB3



Pin	Definition	Pin	Definition
1	VCC5_A	5	VCC5_A
2	USB_4N	6	USB_5N
3	USB_4P	7	USB_5P
4	GND	8	GND

COM1 and COM2 Connector

Connector type: DB-9 port
Connector location: COM2A (COM1) and COM2B (COM2)



COM1 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP1_DCD	1	SP1_DATA-	1	SP1_TX-
2	SP1_RXD	2	SP1_DATA+	2	SP1_TX+
3	SP1_TXD	3	NC	3	SP1_RX+
4	SP1_DTR	4	NC	4	SP1_RX-
5	ISO_GND	5	ISO_GND	5	ISO_GND
6	SP1_DSR	6	NC	6	SP1_RTS-
7	SP1_RTS	7	NC	7	SP1_RTS+
8	SP1_CTS	8	NC	8	SP1_CTS+
9	SP1_RI	9	NC	9	SP1_CTS-

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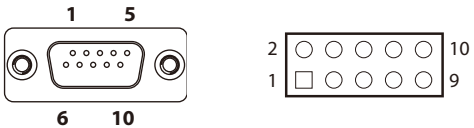
COM2 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP2_DCD	1	SP2_DATA-	1	SP2_TX-
2	SP2_RXD	2	SP2_DATA+	2	SP2_TX+
3	SP2_TXD	3	NC	3	SP2_RX+
4	SP2_DTR	4	NC	4	SP2_RX-
5	ISO_GND	5	ISO_GND	5	ISO_GND
6	SP2_DSR	6	NC	6	SP2_RTS-
7	SP2_RTS	7	NC	7	SP2_RTS+
8	SP2_CTS	8	NC	8	SP2_CTS+
9	SP2_RI	9	NC	9	SP2_CTS-

GPIO

Connector type: DB-15; 2x5 10-pin header
Connector location: J6



Pin	Definition	Pin	Definition
1	ISO_VCC5	2	ISO_GND
3	SIO_GPO24(Pin58)	4	SIO_GPI20(Pin52)
5	SIO_GPO25(Pin59)	6	SIO_GPI21(Pin54)
7	SIO_GPO26(Pin60)	8	SIO_GPI22(Pin56)
9	SIO_GPO27(Pin61)	10	SIO_GPI23(Pin57)

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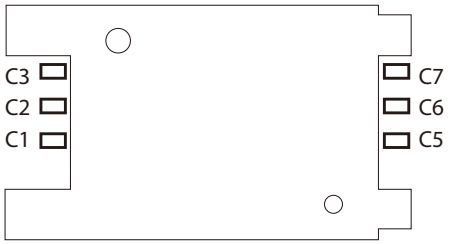
SIM Card Connector

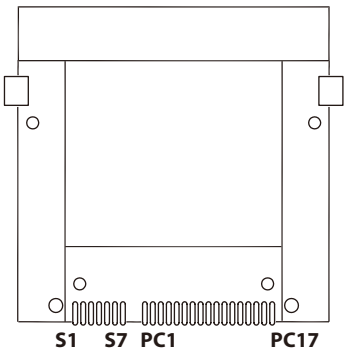
Connector location: IDE1



Pin	Definition	Pin	Definition
C1	UIM_PWR	C2	UIM_RESET
C3	UIM_CLK	C5	GND
C6	UIM_VPP	C7	UIM_DATA

CFast Connector

Connector location: CN10



Pin	Definition	Pin	Definition
S1	GND	PC6	NC
S2	SATA_TXP1	PC7	GND
S3	SATA_TXN1	PC8	NC
S4	GND	PC9	CFAST_ACCESS
S5	SATA_RXN1	PC10	NC
S6	SATA_RXP1	PC11	NC
S7	GND	PC12	NC
PC1	CDI	PC13	+3.3V
PC2	GND	PC14	+3.3V
PC3	NC	PC15	GND
PC4	NC	PC16	GND
PC5	NC	PC17	NC

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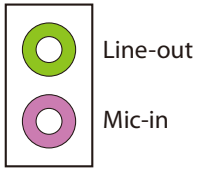
Audio Connectors

Connector type: 2x 3.5mm TRS
Connector location: CN7A (Mic-in) and CN7B (Line-out)



Pin	Definition	Pin	Definition
1	NC	2	MIC_L
3	GND	4	MIC_JD
5	MIC_R		
22	OUT_L	23	GND
24	EXLINEOUT_JD	25	OUT_R
NH1			

Power Switch

Connector location: SW1

Pin	Definition	Pin	Definition
1	GND	2	VCC3_A
3	VCC3_A	4	GND
A1	PWRLED_N	C1	PWRLED_P
MH1	NC	MH2	NC

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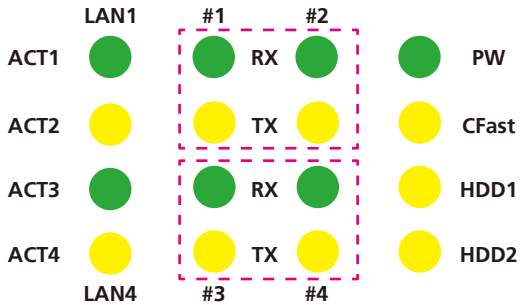
LAN1/LAN2/LAN3/LAN4 Link/Active LEDs

Connector location: LED1, LED2, LED3 and LED4



LAN Ports

Status	LED Color	Definition
LAN1/ACT1	Green	Activity of LAN1
LAN2/ACT2	Yellow	Activity of LAN2
LAN3/ACT3	Green	Activity of LAN3
LAN4/ACT4	Yellow	Activity of LAN4

COM1 and COM2

Status	LED Color	Definition
#1/RX	Green	Receive signal of COM1
#1/TX	Yellow	Transmit signal of COM1
#2/RX	Green	Receive signal of COM2
#2/TX	Yellow	Transmit signal of COM2

COM3 and COM4

Status	LED Color	Definition
#3/RX	Green	Receive signal of COM3
#3/TX	Yellow	Transmit signal of COM3
#4/RX	Green	Receive signal of COM3
#4/TX	Yellow	Transmit signal of COM4

Power, CFast, HDD1 and HDD2

Status	LED Color	Definition
PW	Green	Power status of the system
CFast	Yellow	Activity of CFast
HDD1	Yellow	Activity of HDD1
HDD2	Yellow	Activity of HDD2

Note: LED indication of NISE2200/NISE2300 is controlled by HDD/SSD/CFast itself. Some HDD/SSD/CFast might not flash due to its design limitation.

		Flashing	LED On	No LED
SSD	Apacer SSD APS25P6B032G-CCM 32G			✓
	Apacer SSD APS25P6B032G-CTW 32G			✓
	Apacer SSD APS25P6B064G-CCM 64G			✓
2.5" HDD	2.5" HDD Toshiba MK1676GSX 160G	✓		
	2.5" HDD Hitachi HTS541640J9SA00 40G	✓		
	2.5" HDD Seagate ST9160314AS 160G	✓		
	2.5" HDD Fujitsu MHZ008DBH 80G	✓		
Cfast	Cfast Transcend 8G			✓
	Cfast Apacer APCFA004GT6HS-ETT 4G	✓		
	Cfast Unigen UGB31JAC8000A1 8G	✓		

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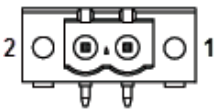
External I/O Interfaces – Rear Panel

9~36V DC Power Input

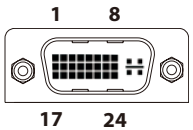
Connector type: Phoenix Contact 1x2 2-pin terminal block
Connector location: CN1



Pin	Definition
1	GND
2	VIN

DVI-I Connector

Connector type: 24-pin D-Sub, 2.0mm-M-180 (DVI)
Connector location: CN11A



Pin	Definition	Pin	Definition
1	DDI1_TX2-	13	NC
2	DDI1_TX2+	14	DVI_VCC(+5V)
3	GND	15	GND
4	NC	16	HotPlugDet
5	NC	17	DDI1_TX0-
6	DDI1_DDC_CLK	18	DDI1_TX0+
7	DDI1_DDC_DATA	19	GND
8	VSYNC_VGA	20	DDCCLK_VGA
9	DDI1_TX1-	21	DDCDATA_VGA
10	DDI1_TX1+	22	GND
11	GND	23	DDI1_TXCLK+
12	NC	24	DDI1_TXCLK-
A1	RED	A5A	VGADET
A2	GREEN	A5B	GND
A3	BULE	MH1	CHASSIS_GND
A4	HSYNC_VGA	MH2	CHASSIS_GND

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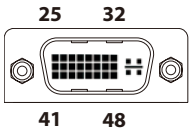
DVI-D Connector

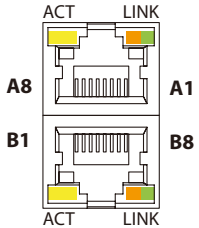
Connector type: 24-pin D-Sub, 2.0mm-M-180 (DVI)
Connector location: CN11B



Pin	Definition	Pin	Definition
25	DDI0_TX2-	37	NC
26	DDI0_TX2+	38	DVI_VCC(+5V)
27	GND	39	GND
28	NC	40	HotPlugDet
29	NC	41	DDI0_TX0-
30	DDI0_DDC_CLK	42	DDI0_TX0+
31	DDI0_DDC_DATA	43	GND
32	NC	44	NC
33	DDI0_TX1-	45	NC
34	DDI0_TX1+	46	GND
35	GND	47	DDI0_TXCLK+
36	NC	48	DDI0_TXCLK-
B1	NC	B5A	NC
B2	NC	B5B	NC
B3	NC	MH1	CHASSIS_GND
B4	NC	MH2	CHASSIS_GND

LAN1 and LAN3 Ports

Connector type: RJ45 port with LEDs
Connector location: COP2A (LAN1) and COP2B (LAN3)



Link	Status
Steady Green	1G network link
Steady Orange	10/100Mbps network link
Off	No link

Act	Status
Flashing Yellow	Data activity
Off	No activity

LAN1

Pin	Definition	Pin	Definition
A1	LAN1_MDI0P	A10	GND
A2	LAN1_MDI0N	A11	LAN1_LED2P
A3	LAN1_MDI1P	A12	LAN1_LED3P
A4	LAN1_MDI1N	A13	LAN1_LED_ACT#
A5	LAN1_MDI2P	A14	LAN1_LED1P
A6	LAN1_MDI2N	MH1	GND
A7	LAN1_MDI3P	MH2	GND
A8	LAN1_MDI3N	MH3	GND
A9	LAN1P1V9		

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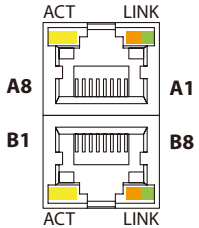
LAN3

Pin	Definition	Pin	Definition
B1	LAN3_MDI0P	B10	GND
B2	LAN3_MDI0N	B11	LAN3_LED2P
B3	LAN3_MDI1P	B12	LAN3_LED3P
B4	LAN3_MDI1N	B13	LAN3_LED_ACT#
B5	LAN3_MDI2P	B14	LAN3_LED1P
B6	LAN3_MDI2N	MH4	GND
B7	LAN3_MDI3P	MH5	GND
B8	LAN3_MDI3N	MH6	GND
B9	LAN3P1V9		

LAN2 and LAN4 Ports

Connector type: RJ45 port with LEDs
Connector location: COP1A (LAN2) and COP1B (LAN4)



Link	Status
Steady Green	1G network link
Steady Orange	10/100Mbps network link
Off	No link

Act	Status
Flashing Yellow	Data activity
Off	No activity

LAN2

Pin	Definition	Pin	Definition
A1	LAN2_MDI0P	A10	GND
A2	LAN2_MDI0N	A11	LAN2_LED2P
A3	LAN2_MDI1P	A12	LAN2_LED3P
A4	LAN2_MDI1N	A13	LAN2_LED_ACT#
A5	LAN2_MDI2P	A14	LAN2_LED1P
A6	LAN2_MDI2N	MH1	GND
A7	LAN2_MDI3P	MH2	GND
A8	LAN2_MDI3N	MH3	GND
A9	LAN2P1V9		

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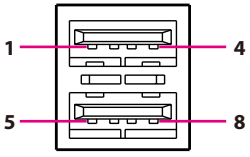
LAN4

Pin	Definition	Pin	Definition
B1	LAN4_MDI0P	B10	GND
B2	LAN4_MDI0N	B11	LAN4_LED2P
B3	LAN4_MDI1P	B12	LAN4_LED3P
B4	LAN4_MDI1N	B13	LAN4_LED_ACT#
B5	LAN4_MDI2P	B14	LAN4_LED1P
B6	LAN4_MDI2N	MH4	GND
B7	LAN4_MDI3P	MH5	GND
B8	LAN4_MDI3N	MH6	GND
B9	LAN4P1V9		

USB3 and USB4 Ports

Connector type: Dual USB 2.0 ports, Type A
Connector location: USB2



Pin	Definition	Pin	Definition
1	VCC5_A	5	VCC5_A
2	USB_2N	6	USB_4N
3	USB_2P	7	USB_4P
4	GND	8	GND

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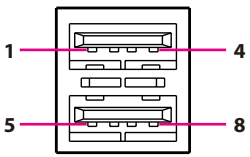
USB1 and USB2 Ports

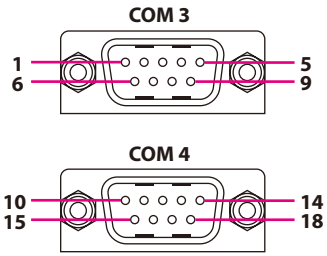
Connector type: Dual USB 2.0 ports, Type A
Connector location: USB1



Pin	Definition	Pin	Definition
1	VCC5_A	5	VCC5_A
2	USB_0N	6	USB_1N
3	USB_0P	7	USB_1P
4	GND	8	GND

COM3 and COM4 Ports

Connector type: DB-9 port, 9-pin D-Sub
Connector location: COM1A (COM3) and COM1B (COM4)



COM3 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP3_DCD	1	SP3_DATA-	1	SP3_TX-
2	SP3_RXD	2	SP3_DATA+	2	SP3_TX+
3	SP3_TXD	3	NC	3	SP3_RX+
4	SP3_DTR	4	NC	4	SP3_RX-
5	GND	5	GND	5	GND
6	SP3_DSR	6	NC	6	SP3_RTS-
7	SP3_RTS	7	NC	7	SP3_RTS+
8	SP3_CTS	8	NC	8	SP3_CTS+
9	SP3_RI	9	NC	9	SP3_CTS-

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COM4 Connector Pin Definition

RS232		RS485		RS422	
Pin	**Definition**	**Pin**	**Definition**	**Pin**	**Definition**
10	SP4_DCD	1	SP4_DATA-	1	SP4_TX-
11	SP4_RXD	2	SP4_DATA+	2	SP4_TX+
12	SP4_TXD	3	NC	3	SP4_RX+
13	SP4_DTR	4	NC	4	SP4_RX-
14	GND	5	GND	5	GND
15	SP4_DSR	6	NC	6	SP4_RTS-
16	SP4_RTS	7	NC	7	SP4_RTS+
17	SP4_CTS	8	NC	8	SP4_CTS+
18	SP4_RI	9	NC	9	SP4_CTS-

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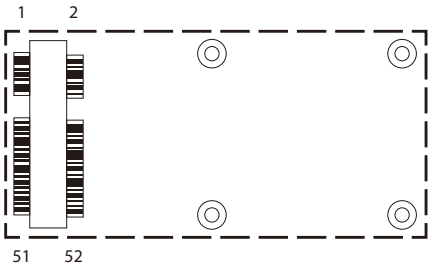
Internal Connectors

Mini-PCIe Connector

Connector location: CN6



Pin	Definition	Pin	Definition
1	PCIEWAKE#	14	N/A
2	+3VSB	15	GND
3	N/A	16	N/A
4	GND	17	N/A
5	N/A	18	GND
6	+1.5V	19	N/A
7	CLKREQ#	20	Disable#
8	N/A	21	GND
9	GND	22	RST#
10	N/A	23	PCIERX0-
11	REF CLK-	24	+3VSB
12	N/A	25	PCIERX0+
13	REF CLK+	26	GND

Pin	Definition	Pin	Definition
27	GND	40	GND
28	+1.5V	41	+3VSB
29	GND	42	N/A
30	SMBCLK	43	GND
31	PCIETX0-	44	N/A
32	SMBDATA	45	N/A
33	PCIETX0+	46	N/A
34	GND	47	N/A
35	GND	48	+1.5V
36	USB_D-	49	N/A
37	GND	50	GND
38	USB_D+	51	N/A
39	+3VSB	52	+3VSB

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3.5G Line-out Pin Header

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP6

Pin	Definition
1	LOUT_RL
2	LOUT_RR
3	ANGND

3.5G Mic-in Pin Header

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP7

Pin	Definition
1	MIC_RL
2	MIC_RR
3	ANGND

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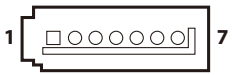
Line-in Pin Header

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP5

Pin	Definition
1	FLIN_L
2	LIN_JD
3	GND
4	FLIN_R

SATA1 Connector

Connector type: Standard Serial ATAII 7P (1.27mm, SATA-M-180)
Connector location: SATA1



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP0
3	SATA_TXN0	4	GND
5	SATA_RXN0	6	SATA_RXP0
7	DATA_DET0		

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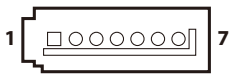
SATA1 Power Connector

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: J8

Pin	Definition	Pin	Definition
1	SATA_DET0	2	SATA_LED0
3	GND	4	VCC5_SATA0

SATA2 Connector

Connector type: Standard Serial ATAII 7P (1.27mm, SATA-M-180)
Connector location: SATA2



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP1
3	SATA_TXN1	4	GND
5	SATA_RXN1	6	SATA_RXP1
7	DATA_DET1		

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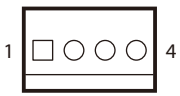
SATA2 Power Connector

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: J7

Pin	Definition	Pin	Definition
1	SATA_DET1	2	SATA_LED1
3	GND	4	VCC5_SATA1

FAN1 Connector

Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: FAN1



Pin	Definition	Pin	Definition
1	GND	3	FAN_TAC1 (CPU_FAN_SPEED)
2	VCC12_S	4	FAN_CTL1 (CPU_FAN_PWM)

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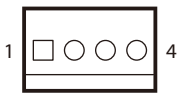
FAN2 Connector

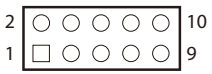
Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: FAN2



Pin	Definition	Pin	Definition
1	GND	3	FAN_TAC2 (CPU_FAN_SPEED)
2	VCC12_S	4	FAN_CTL2 (CPU_FAN_PWM)

GPIO Pin Header

Connector type: 2x5 10-pin header, 2.0mm pitch
Connector location: J6



Pin	Definition	Pin	Definition
1	ISO_VCC5	2	ISO_GND
3	SIO_GPO24(Pin58)	4	SIO_GPI20(Pin52)
5	SIO_GPO25(Pin59)	6	SIO_GPI21(Pin54)
7	SIO_GPO26(Pin60)	8	SIO_GPI22(Pin56)
9	SIO_GPO27(Pin61)	10	SIO_GPI23(Pin57)

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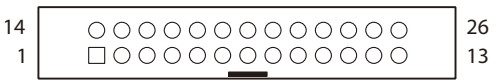
GPS Connector

Connector type: 1x6 JST, 6-pin header, 1.0mm pitch
Connector location: J3

Pin	Definition	Pin	Definition
1	VCC3_A	2	NA
3	COM5_TXD	4	COM5_RXD
5	GND	6	VCC3_S

Print Box Header

Connector type: 2x13 26-pin header, 2.0mm pitch
Connector location: CN5



Pin	Definition	Pin	Definition
1	LPT_RP_STB#	2	LPT_RP_PRD0
3	LPT_RP_PRD1	4	LPT_RP_PRD2
5	LPT_RP_PRD3	6	LPT_RP_PRD4
7	LPT_RP_PRD5	8	LPT_RP_PRD6
9	LPT_RP_PRD7	10	LPT_ACK#R
11	LPT_BUSY	12	LPT_PE
13	LPT_SLCT	14	LPT_AFD#R
15	LPT_ERR#	16	LPT_INIT#R
17	LPT_SLIN#R	18	LPT_GND
19	LPT_GND	20	LPT_GND
21	LPT_GND	22	LPT_GND
23	LPT_GND	24	LPT_GND
25	LPT_GND	26	NC

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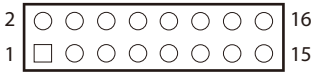
PWR_BT/RET_BT/LED Pin Header

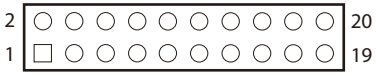
Connector type: 2x8 16-pin header, 2.0mm pitch
Connector location: JP3



Pin	Definition	Pin	Definition
1	PWR_LED_N	2	PWR_LED_P
3	CFAST_ACCESS	4	SATA_LED_P
5	SATA_LED0_N	6	VCC5_S
7	SATA_LED1_N	8	VCC5_S
9	SLP_S3	10	PSON
11	RESET BOTTOM	12	GND
13	POWER BOTTOM	14	GND
15	AT Mode	16	GND

SMBUS/LAN1/2/3/4 LED Pin Header

Connector type: 2x10 20-pin header, 2.0mm pitch
Connector location: JP4



Pin	Definition	Pin	Definition
1	SMBCLK	2	SMBDAT
3	VCC3_A	4	GND
5	LAN1LINKMIX	6	VCC3_A
7	LAN1_LED_ACT#	8	VCC3_A
9	LAN2LINKMIX	10	VCC3_A
11	LAN2_LED_ACT#	12	VCC3_A
13	LAN3LINKMIX	14	VCC3_A
15	LAN3_LED_ACT#	16	VCC3_A
17	LAN4LINKMIX	18	VCC3_A
19	LAN4_LED_ACT#	20	VCC3_A

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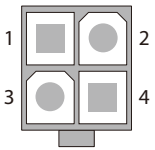
USB Internal Connector

Connector type: 1x6 JST, 6-pin header, 2.0mm pitch
Connector location: CN3

Pin	Definition	Pin	Definition
1	VCC5_A	2	USB_10N
3	USB_10P	4	USB_11N
5	USB_11P	6	GND

POE Connector

Connector type: 2x2 4-pin header, 4.2mm pitch
Connector location: CN2



Pin	Definition	Pin	Definition
1	GND	2	GND
3	VIN	4	VIN

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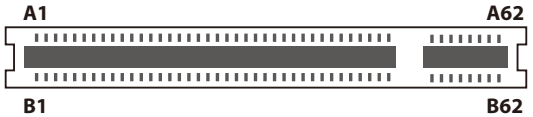
PCI Connector

Connector location: CN8



Pin	Definition	Pin	Definition
A1	TRST#	B1	-12V
A2	+12V	B2	TCK
A3	TMS	B3	GND
A4	TDI	B4	TDO
A5	+5V	B5	+5V
A6	INTA#	B6	+5V
A7	INTC#	B7	INTB#
A8	+5V	B8	INTD#
A9	RSV1	B9	PRSNT1#
A10	+5V	B10	RSV5
A11	RSV2	B11	PRSNT2#
A12	GND	B12	GND
A13	GND	B13	GND
A14	+3.3Vaux	B14	RSV6
A15	RST#	B15	GRPIMD
A16	+5V	B16	CLK
A17	GNT#	B17	GND

Pin	Definition	Pin	Definition
A18	GND	B18	REQ#
A19	PME#	B19	+5V
A20	AD30	B20	AD31
A21	+3.3V	B21	AD29
A22	AD28	B22	GND
A23	AD26	B23	AD27
A24	GND	B24	AD25
A25	AD24	B25	+3.3V
A26	IDSEL	B26	C/BE3#
A27	+3.3V	B27	AD23
A28	AD22	B28	GND
A29	AD20	B29	AD21
A30	GND	B30	AD19
A31	AD18	B31	+3.3V
A32	AD16	B32	AD17
A33	+3.3V	B33	C/BE2#
A34	FRAME#	B34	GND

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Pin	Definition	Pin	Definition
A35	GND	B35	IRDY#
A36	TRDY#	B36	+3.3V
A37	GND	B37	DEVSEL#
A38	STOP#	B38	GND
A39	+3.3V	B39	LOCK#
A40	SMBCLK	B40	PERR#
A41	SMBDAT	B41	+3.3V
A42	GND	B42	SERR#
A43	PAR	B43	+3.3V
A44	AD15	B44	C/BE1#
A45	+3.3V	B45	AD14
A46	AD13	B46	GND
A47	AD11	B47	AD12
A48	GND	B48	AD10
A49	AD9	B49	GND
Connector Key			
A52	C/BE0#	B52	AD8
A53	+3.3V	B53	AD7
A54	AD6	B54	+3.3V
A55	AD4	B55	AD5
A56	GND	B56	AD3
A57	AD2	B57	GND
A58	AD0	B58	AD1
A59	+5V	B59	+5V
A60	REQ64#	B60	ACK64#
A61	+5V	B61	+5V
A62	+5V	B62	+5V

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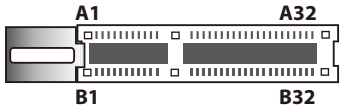
PCIe x4

Connector location: CN9



Pin	Definition	Pin	Definition
A1	PRSNT1	B1	VCC12_S
A2	VCC12_S	B2	VCC12_S
A3	VCC12_S	B3	VCC12_S
A4	GND	B4	GND
A5	NC	B5	SMBCLK
A6	NC	B6	SMBDATA
A7	NC	B7	GND
A8	NC	B8	VCC3_S
A9	VCC3_S	B9	NC
A0	VCC3_S	B10	VCC3_A
A11	PLTRST#_A	B11	PCIE_WAKE#
A12	GND	B12	NC
A13	CLK_PCIE4_P	B13	GND
A14	CLK_PCIE4_N	B14	PE_TX1_P
A15	GND	B15	PE_TX1_N
A16	PE_RX1_P	B16	GND

Pin	Definition	Pin	Definition
A17	PE_RX1_N	B17	NC
A18	GND	B18	GND
A19	RSVD3	B19	PE_TX2_P
A20	GND	B20	PE_TX2_N
A21	PE_RX2_P	B21	GND
A22	PE_RX2_N	B22	GND
A23	GND	B23	NC
A24	GND	B24	NC
A25	NC	B25	GND
A26	NC	B26	GND
A27	GND	B27	NC
A28	GND	B28	NC
A29	NC	B29	GND
A30	NC	B30	RSVD2
A31	GND	B31	PCIE4DET#
A32	RSVD4	B32	GND

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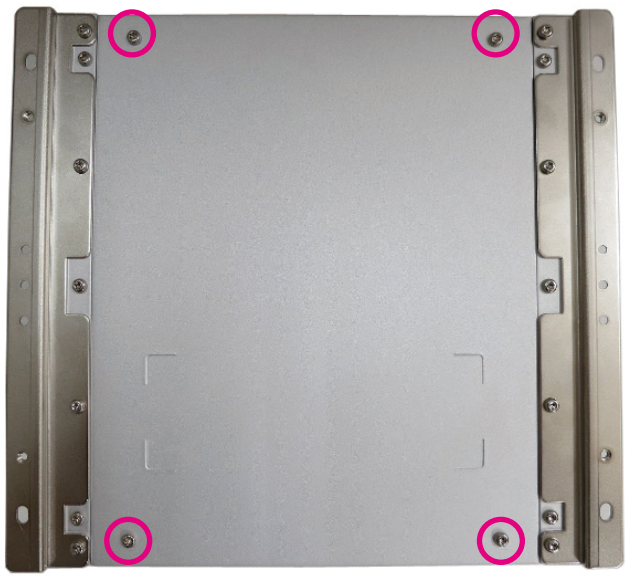
Chapter 3: System Setup

Removing the Chassis Bottom Cover

Note: Installation for SATA Hard Drive and SATA DOM only

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. With the bottom side of the chassis facing up, remove the mounting screw of the bottom cover and then put them in a safe place for later use.
2. Lift up the cover and remove it from the chassis.



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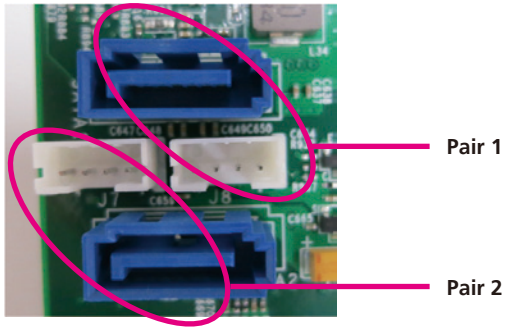
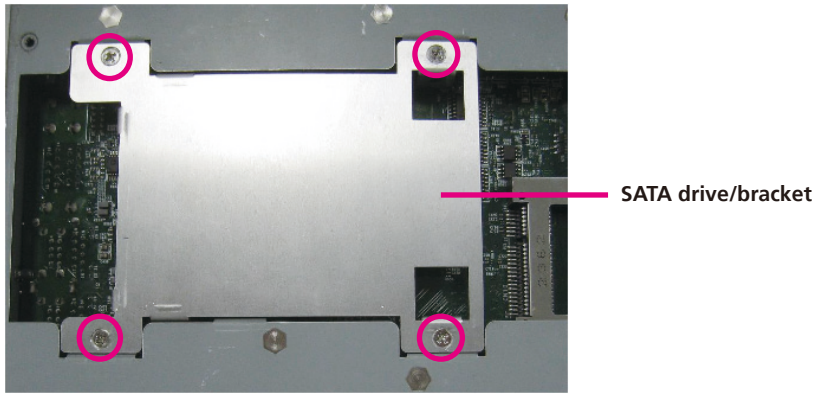
Installing a SATA Hard Drive

Note: The installation of SATA cable and SATA power cable must follow the following pairs.

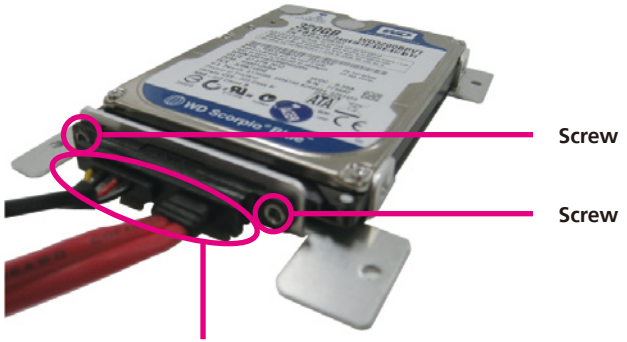


1. Remove 4 screws around the empty HDD bracket.



2. Use the provided screws to secure the drive in place.

3. Connect the SATA data/power cable and secure the cable with provided screws.



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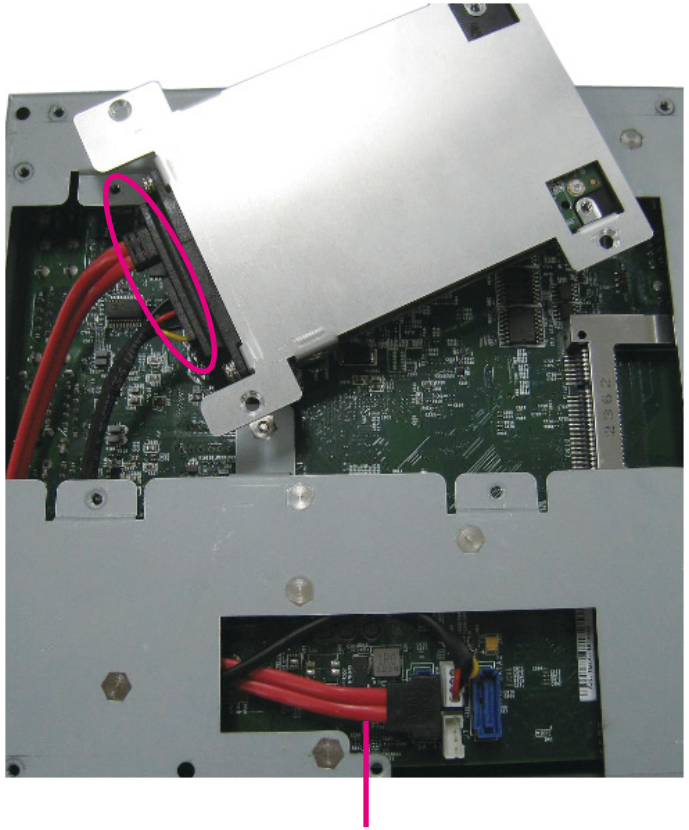
4. Connect the SATA data/power cable to the system according to the pairing model mentioned in the previous page.
5. Secure the HDD bracket to its original place.



SATA data/power cable

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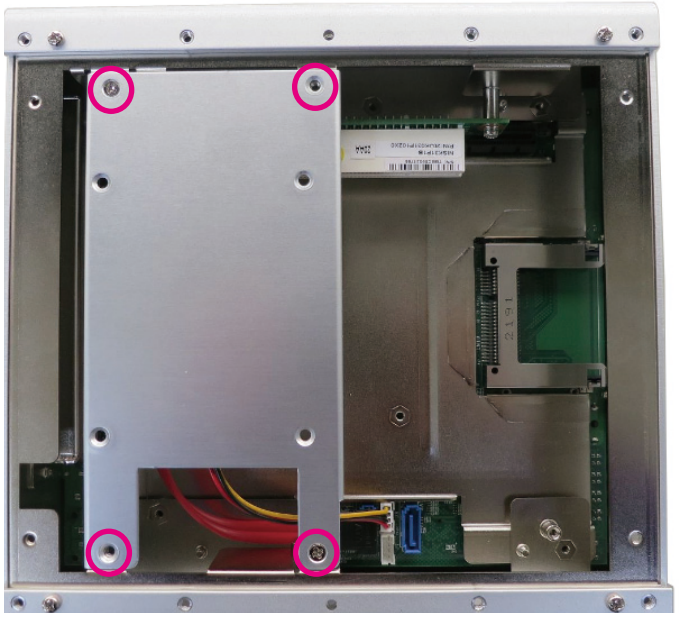
Installing a SATA Hard Drive

NOTE: Installation for NISE 2210/2310/2210E/2310E

1. Remove 4 screws around the empty HDD bracket.



2. Use the provided screws to secure the drive in place.

Screw to fasten HDD drive (both sides)

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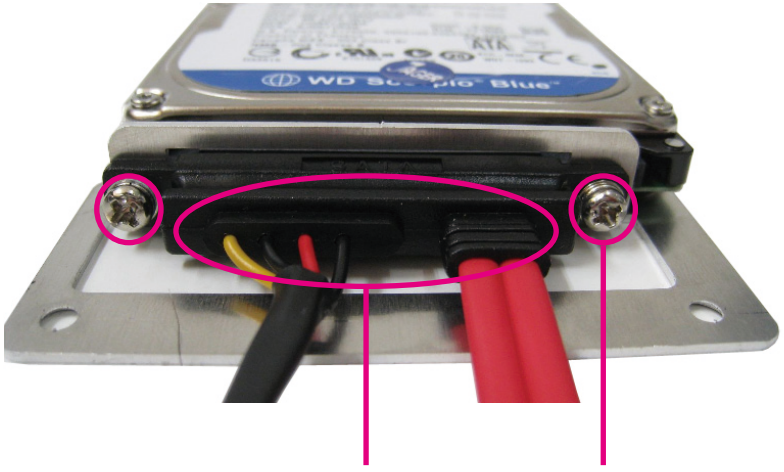
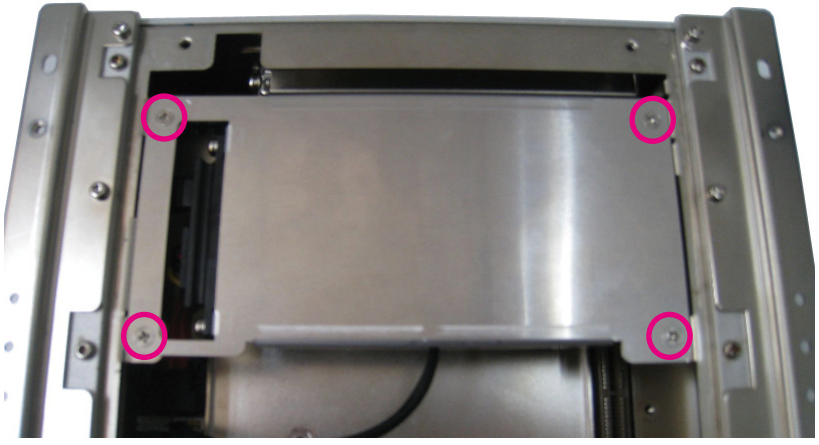
3. Connect the SATA data/power cable and secure the cable with provided screws.



4. Connect the SATA data/power cable to the PCBA and fasten the HDD bracket to its original place.



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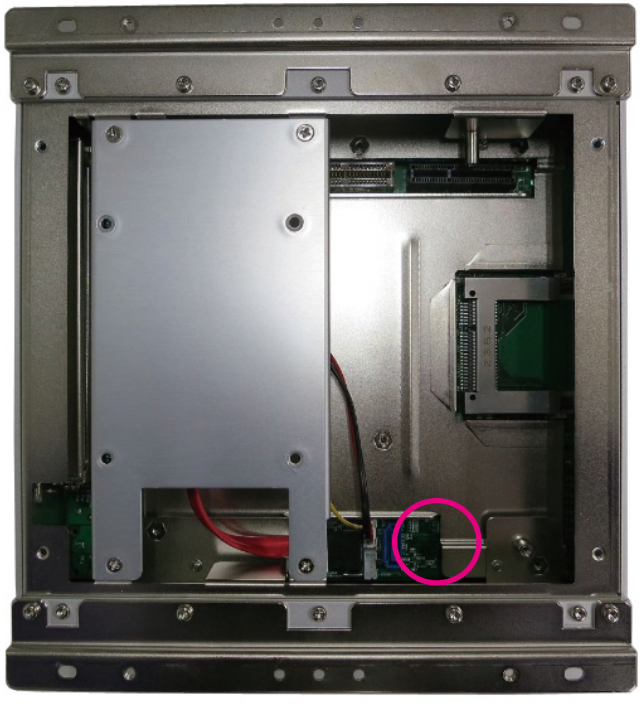
Installing a SATA DOM

NOTE: Only available on NISE 2210/2310/2210E/2310E

1. Locate the SATA connector on the board.



2. Connect the SATA power cable to the SATA DOM.

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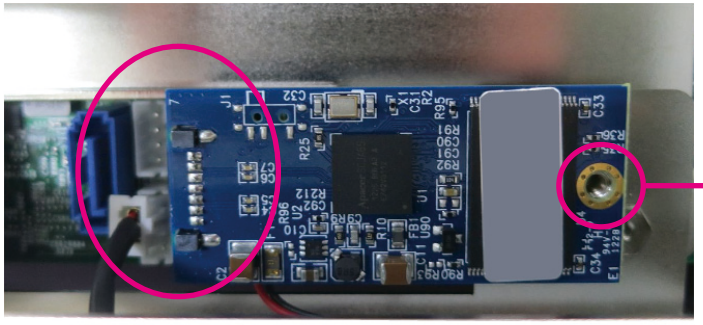
NOTE: Only available on NISE2210/2310/2210E/2310E



3. Insert the SATA DOM and SATA power cable.
4. Secure the SATA DOM with provided screw.

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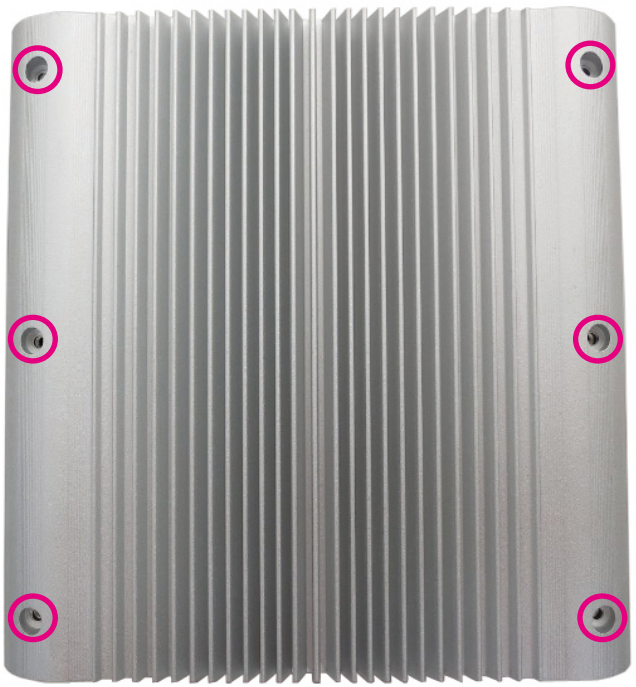
Remove the Chassis Top Cover

1. Remove the mounting screw on the top cover and then put them in a safe place for later use.
2. Lift up the cover and remove it from the chassis.



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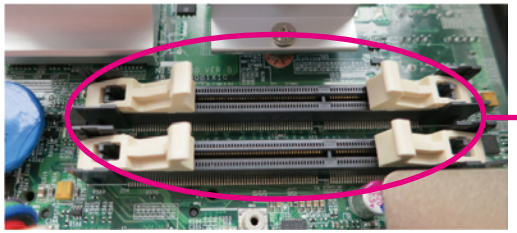
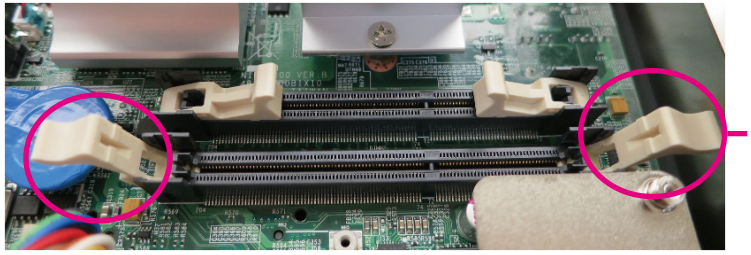
Installing a SO-DIMM

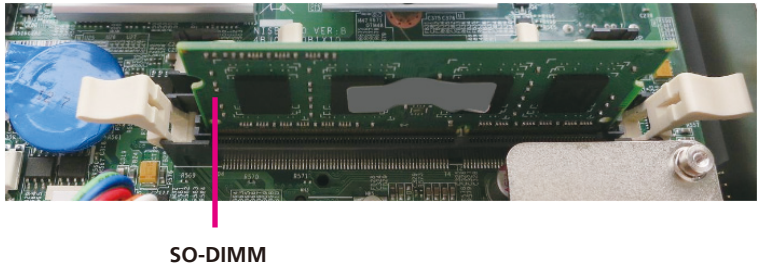
1. Locate the SO-DIMM socket.



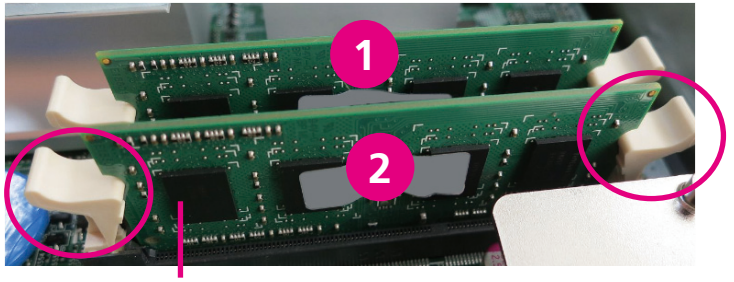
2. Release the lock of the SO-DIMM socket.

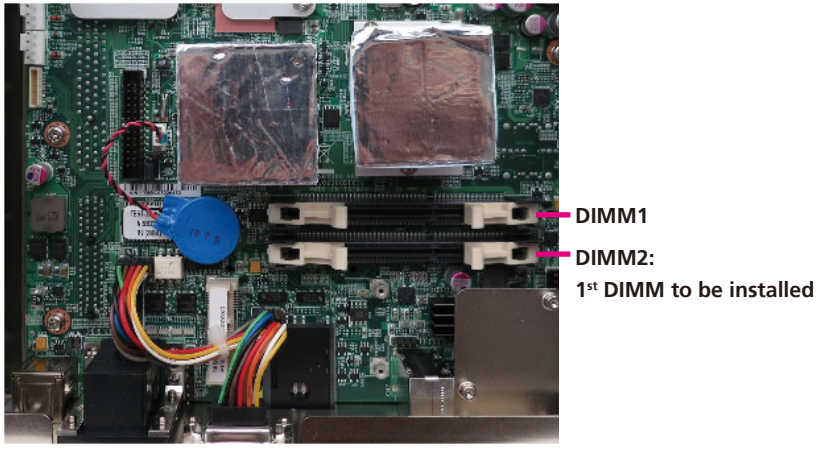


3. Insert the module into the socket at an 90 degree angle. Apply firm and even pressure to each end of the module until it slips into the socket.



4. While pushing the SO-DIMM into the position, the lock will close automatically.





NOTE: If only one SO-DIMM will be installed, DIMM 2 must be installed first.

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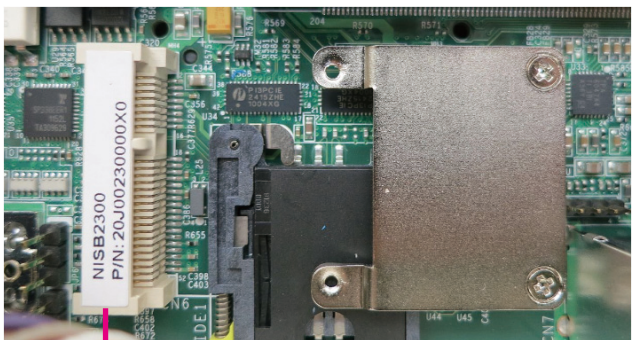
Installing a Wireless LAN Module (half-size)

1. Locate the Mini PCI Express slot on the board.

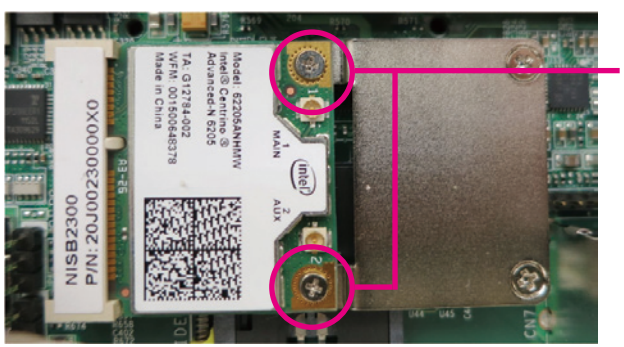


Mini PCI Express Slot

2. Insert the Wifi module into the Mini PCI Express slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

Wifi Module

3. Push the module down and then secure it with mounting screws.



Screw

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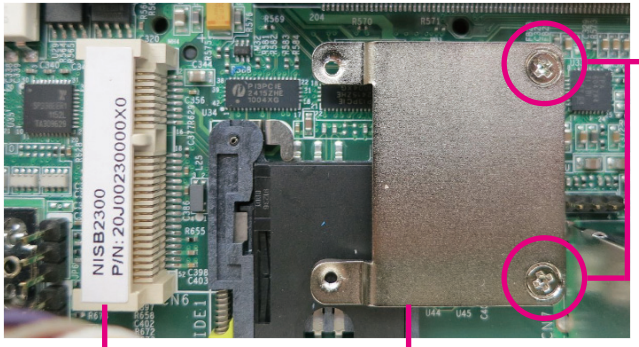
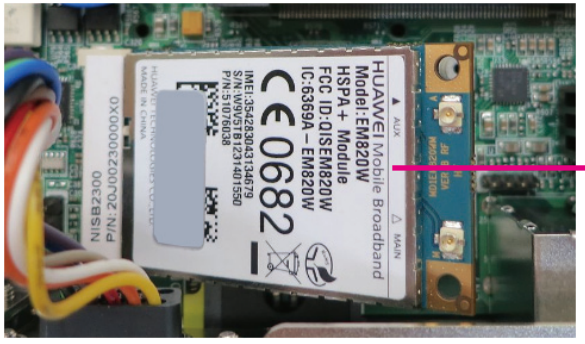
Installing a 3.5G Module (full size)

1. Locate the Mini PCI Express slot on the board. Remove the LAN module bracket and put it in a safe place.



2. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



3. Push the module down and then secure it with mounting screws.

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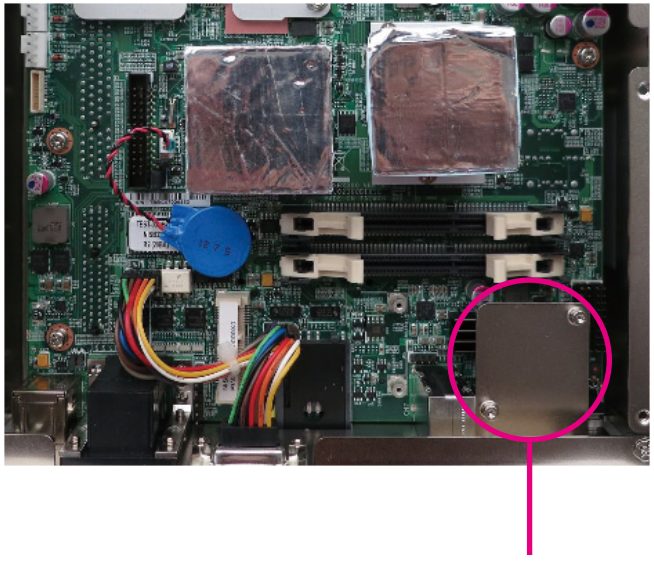
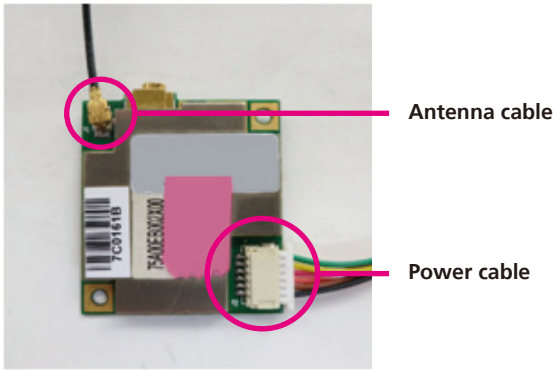
Installing a GPS Module

1. Locate the GPS Module's mounting holes on the chassis.



2. Connect the power cable and antenna cable to the GPS module.



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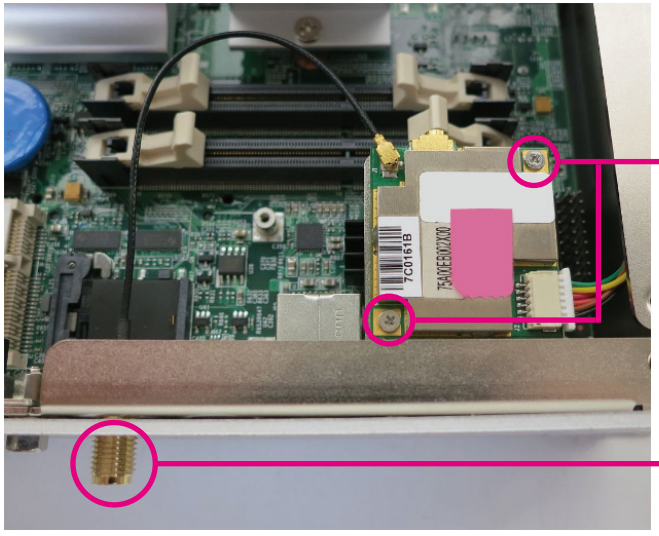
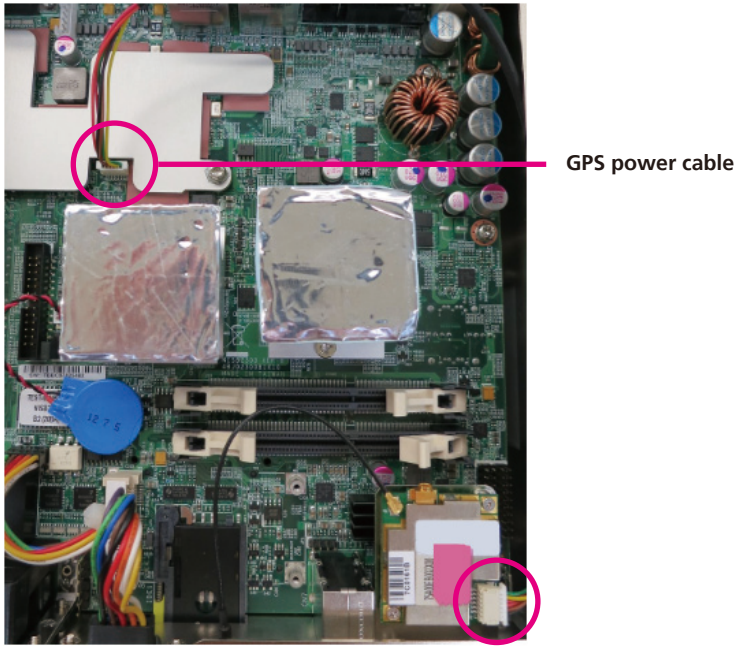
3. Secure the GPS module on the bracket and install the antenna if needed.



4. Connect the GPS power cable to PCBA.



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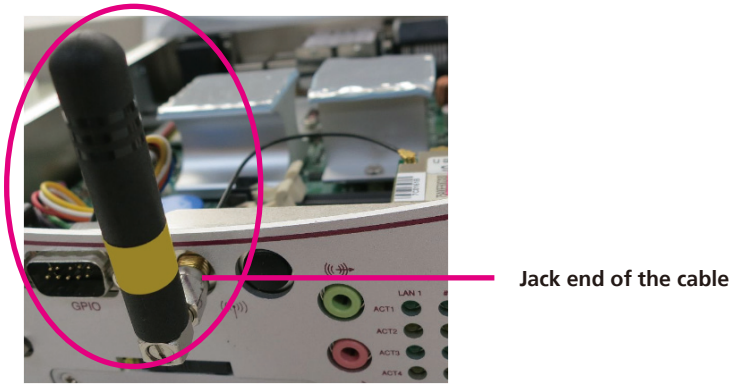
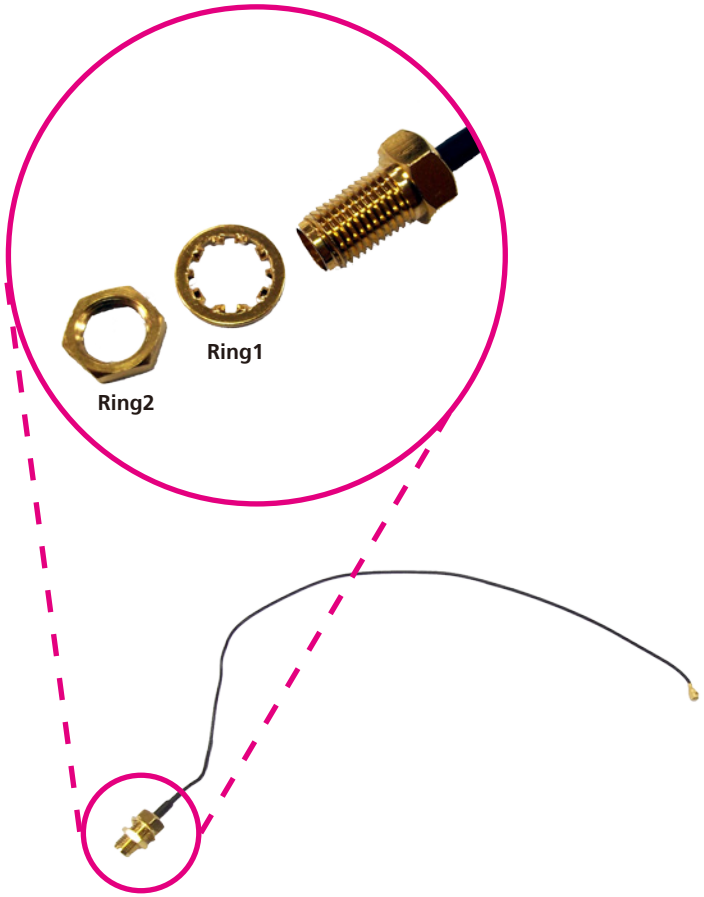
Installing Antenna

1. Remove antenna hole covers located in the front panel.

2. Insert the antenna jack end of the cable through the antenna hole.



3. Insert the 2 rings (ring 1 and ring2) onto the antenna jack end of the cable.



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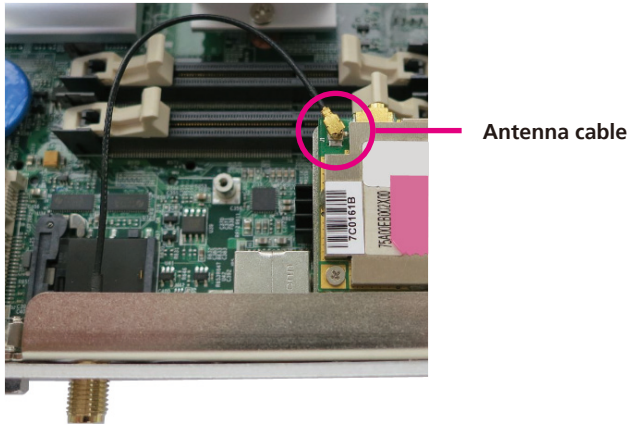
4. Attach the other end of the antenna cable onto the module.



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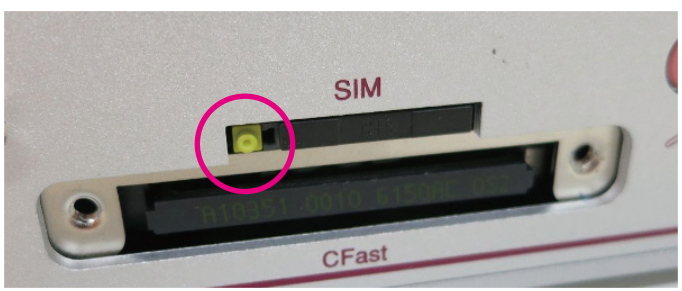
Installing the SIM Card

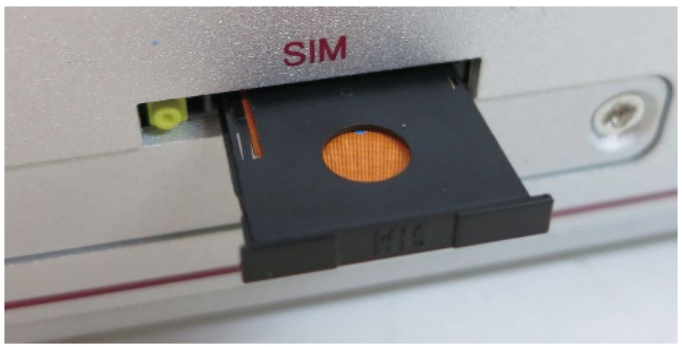
1. Locate the SIM card socket in the front panel.

SIM card

2. Push the yellow button to release the SIM card holder



3. Place the SIM card to the SIM card holder and secure it to the original position.



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Installing a CFast Card

1. The CFast socket is located at the front side of the chassis.

2. Remove the mounting screws and cover of the CFast socket.

3. Insert the CFast Card.
4. Fasten the CFast Card cover after installation.

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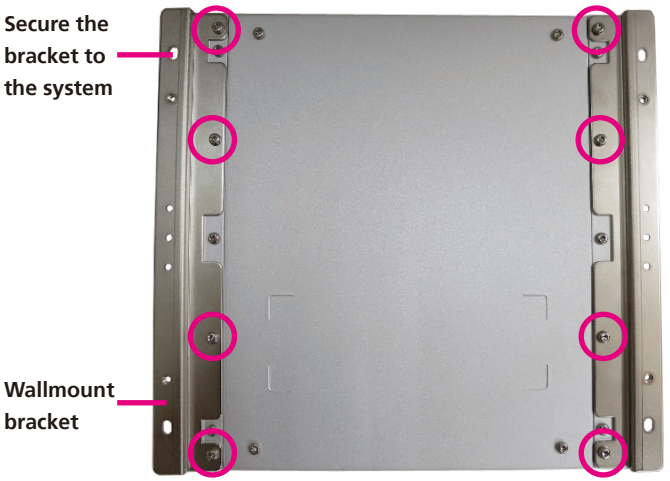
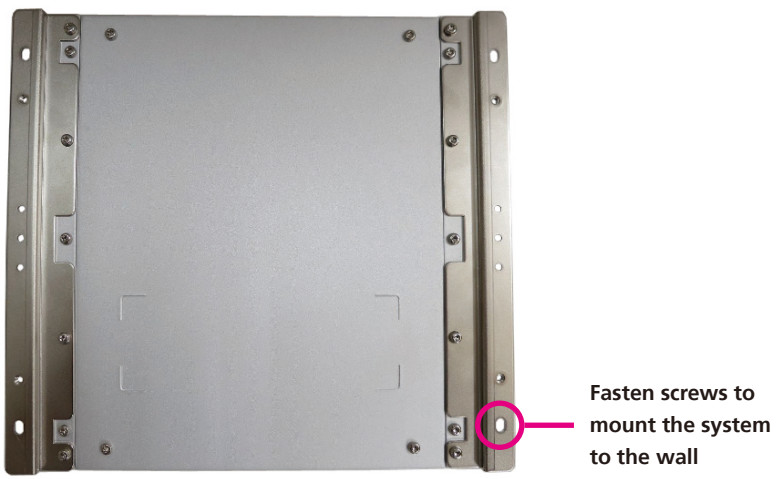
Wallmount Brackets

The wallmount brackets provides a convenient and economical way of mounting the system on the wall.

1. The mounting holes are located at the bottom of the system. Secure the brackets on each side of the system using the provided mounting screws.



2. Now mount the system on the wall by fastening screws through the bracket's mounting holes.



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Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NISE 2300. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM Web site at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

- This program should be executed under the following conditions:
- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

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Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

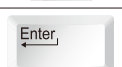
- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing <Del> allows you to enter Setup.

Press the

key to enter Setup:

Legends

Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub¬menus or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub¬menu

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Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press

.

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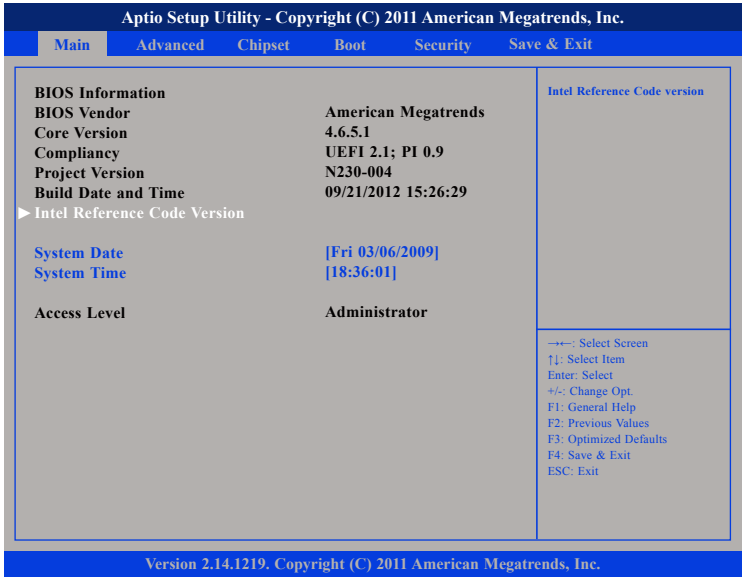
BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from several setup functions and one exit. Use arrow keys to select among the items and press Enter to accept or enter the submenu.

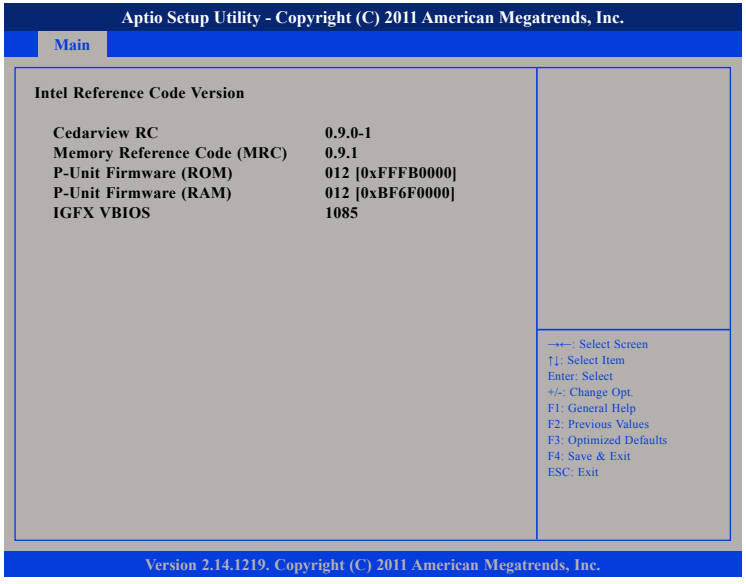
Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



Intel Reference Code Version

Displays the Intel Reference Code version.



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System Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

Access Level

Displays the access level of the current user in the BIOS.

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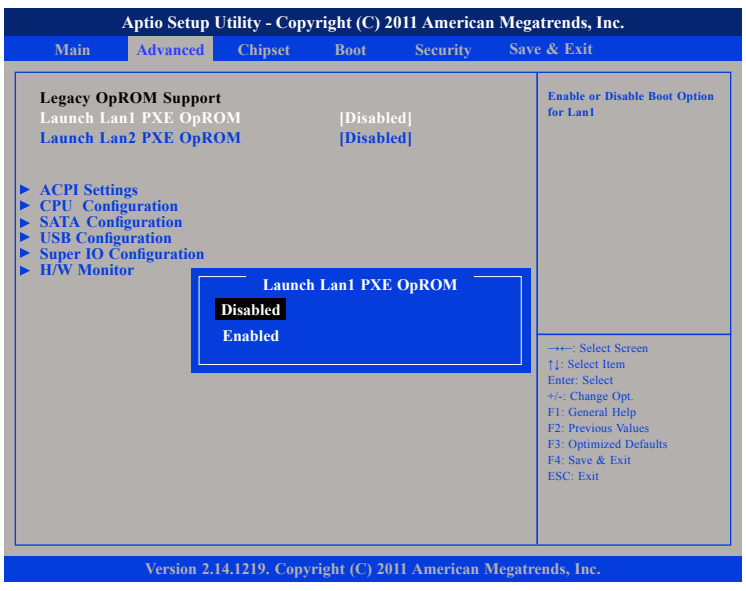
Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Setting incorrect field values may cause the system to malfunction.

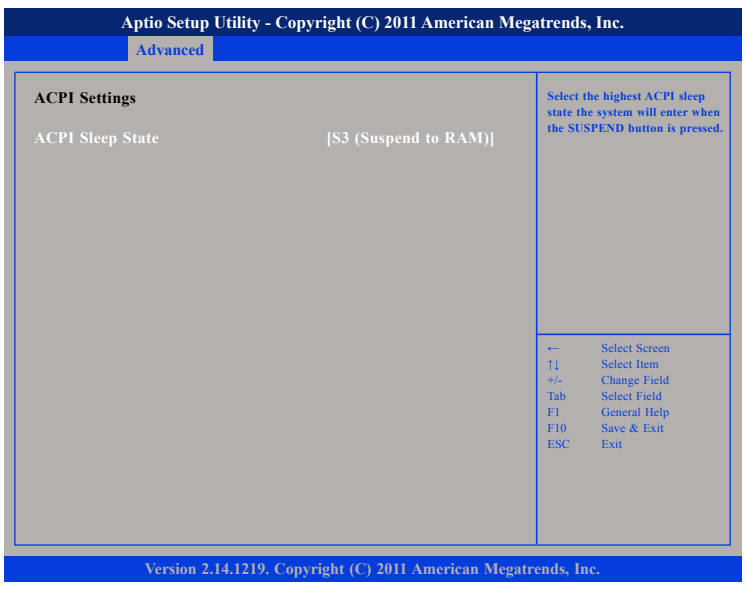


Launch LAN1/2 PXE OpROM

Enables or disables the boot option for legacy network devices connected to LAN1 and LAN2.

ACPI Settings

This section is used to configure ACPI Settings.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
ACPI Settings
ACPI Sleep State [S3 (Suspend to RAM)]
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
← Select Screen
↑↓ Select Item
+/- Change Field
Tab Select Field
F1 General Help
F10 Save & Exit
ESC Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

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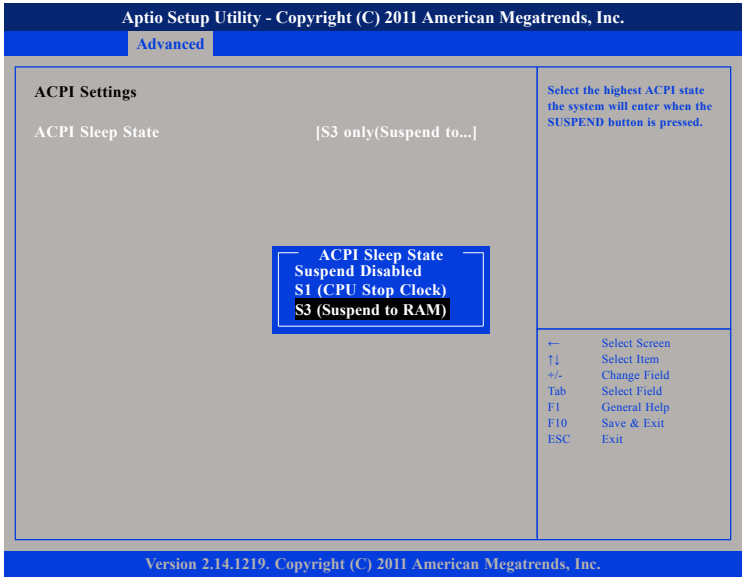
ACPI Sleep State


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
ACPI Settings
ACPI Sleep State
[S3 only(Suspend to...]
Select the highest ACPI state the system will enter when the SUSPEND button is pressed.
ACPI Sleep State
Suspend Disabled
S1 (CPU Stop Clock)
S3 (Suspend to RAM)
← Select Screen
↑↓ Select Item
+/- Change Field
Tab Select Field
F1 General Help
F10 Save & Exit
ESC Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled, S1 (CPU Stop Clock) and S3 (Suspend to RAM).

CPU Configuration

This section is used to configure the CPU.

Aptio Setup Utility - Copyright (C) 2011 America Megatrends, Inc.
Advanced
CPU Configuration
Processor Type Intel(R) Atom (TM) CPU
EMT64 Not Supported
Processor Speed 1865 MHz
System Bus Speed 533 MHZ
Ratio Status 14
Actual Ratio 14
System Bus Speed 533 MHZ
Processor Stepping 30661 (B2 Stepping)
Microcode Revision 265
L1 Cache RAM 2x56 k
L2 Cache RAM 2x512 k
Processor Core Dual
Hyper-Threading Supported
Hyper-Threading [Enabled]
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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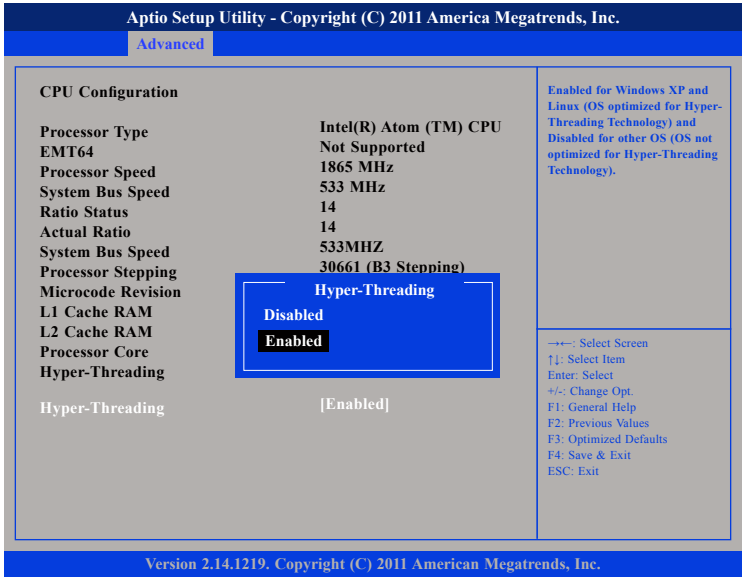
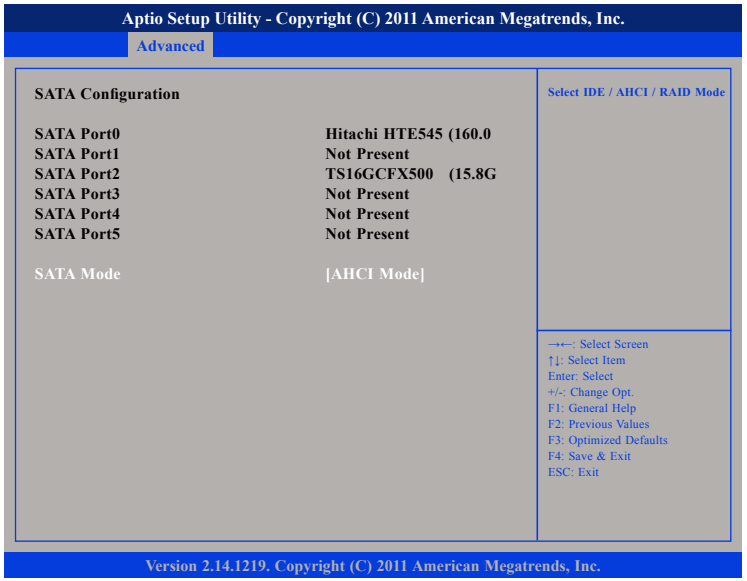
Hyper-Threading



This field is used to enable or disable hyper-threading.

SATA Configuration

This section is used to configure the SATA drives.



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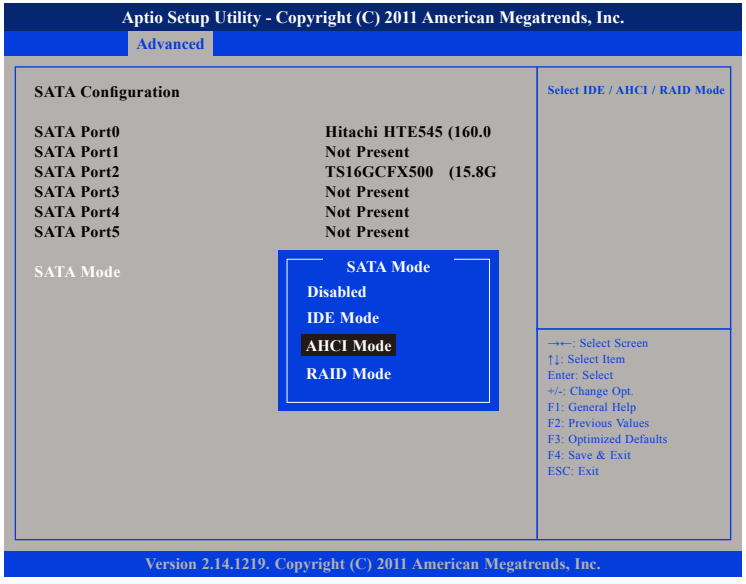
SATA Mode



Configures the SATA as IDE, AHCI or RAID mode.

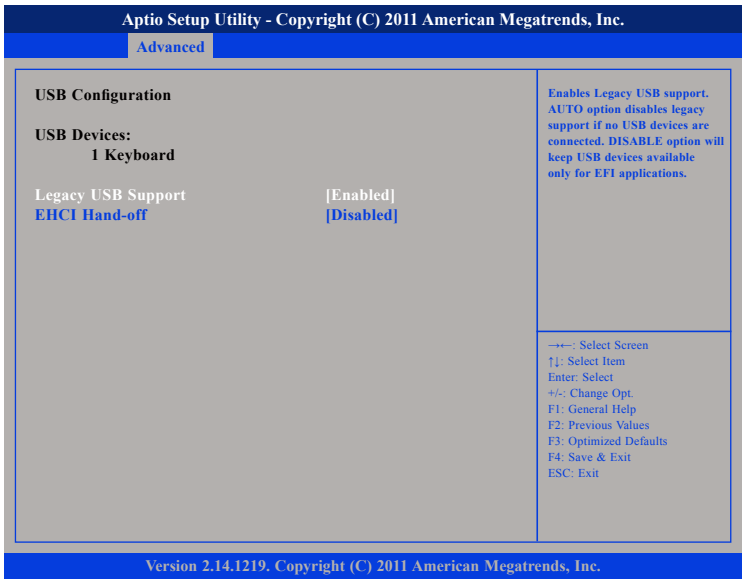
IDE This option configures the Serial ATA drives as Parallel ATA physical storage device.

RAID This option allows you to create RAID or Intel Matrix Storage configuration on Serial ATA devices.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

USB Configuration

This section is used to configure the USB.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
USB Configuration
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
USB Devices:
1 Keyboard
Legacy USB Support [Enabled]
EHCI Hand-off [Disabled]
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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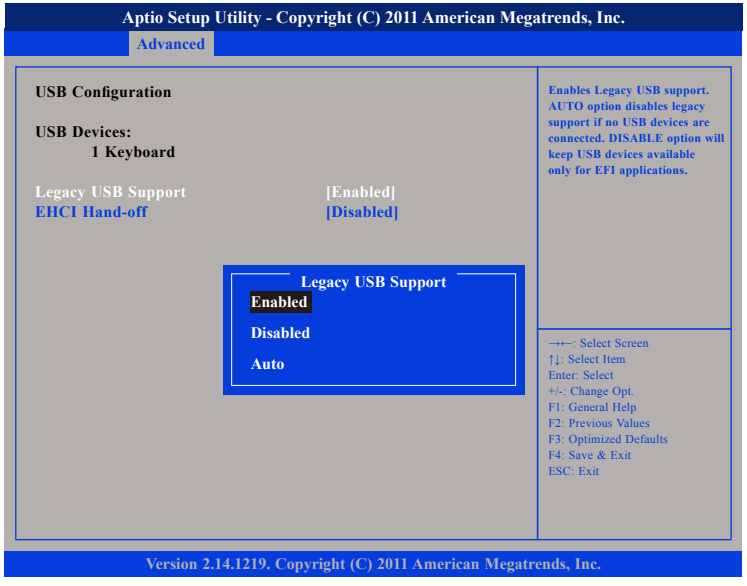
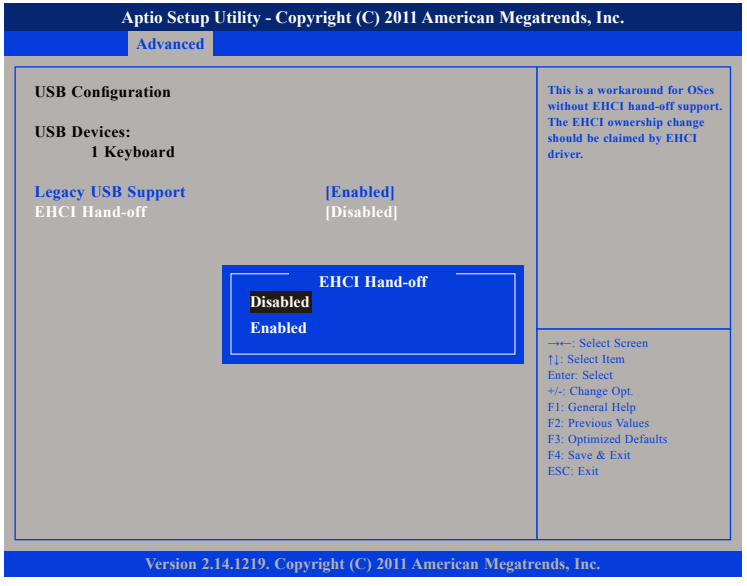
Legacy USB Support


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Keyboard
Legacy USB Support [Enabled]
EHCI Hand-off [Disabled]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
Legacy USB Support
Enabled
Disabled
Auto
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Enable Enables Legacy USB.
Auto Disables support for Legacy when no USB devices are connected.
Disable Keeps USB devices available only for EFI applications.

EHCI Hand-off



This is a workaround for OSes that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

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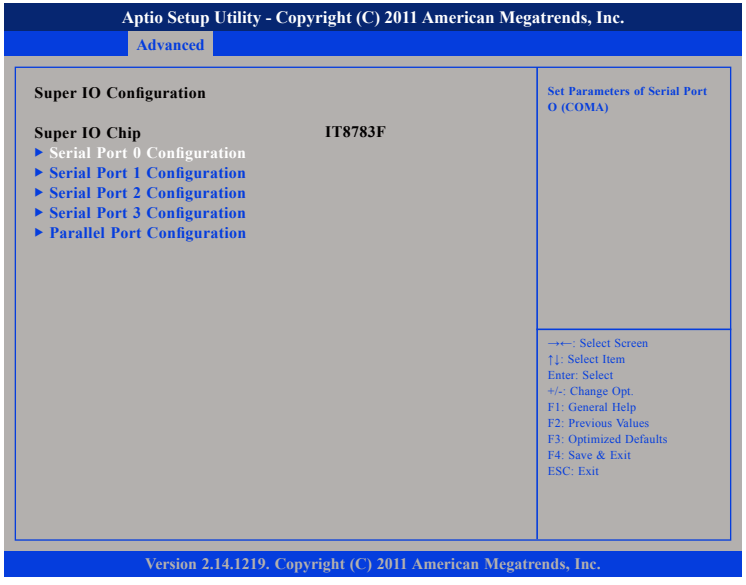
Super IO Configuration

This section is used to configure the serial ports.

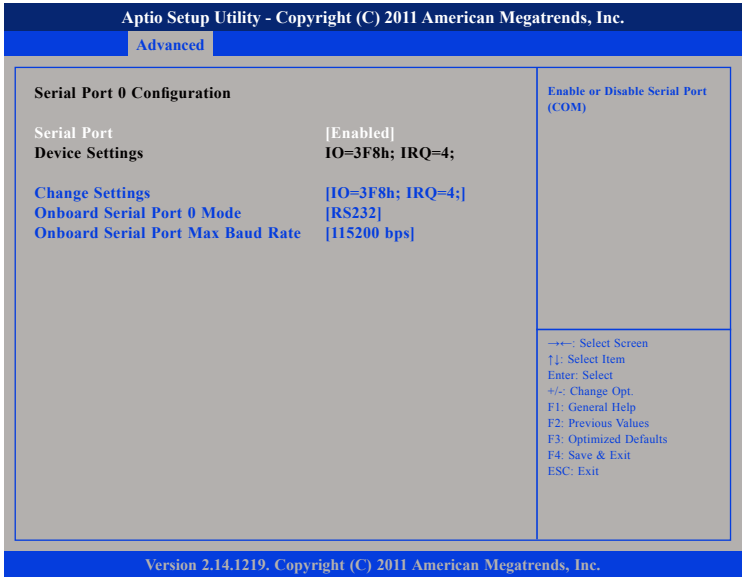


Super IO Chip

Displays the Super I/O chip used on the board.

Serial Port 0 Configuration

This section is used to configure serial port 0.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 0 Configuration
Serial Port [Enabled]
Device Settings IO=3F8h; IRQ=4;
Change Settings [IO=3F8h; IRQ=4;]
Onboard Serial Port 0 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Enable or Disable Serial Port (COM)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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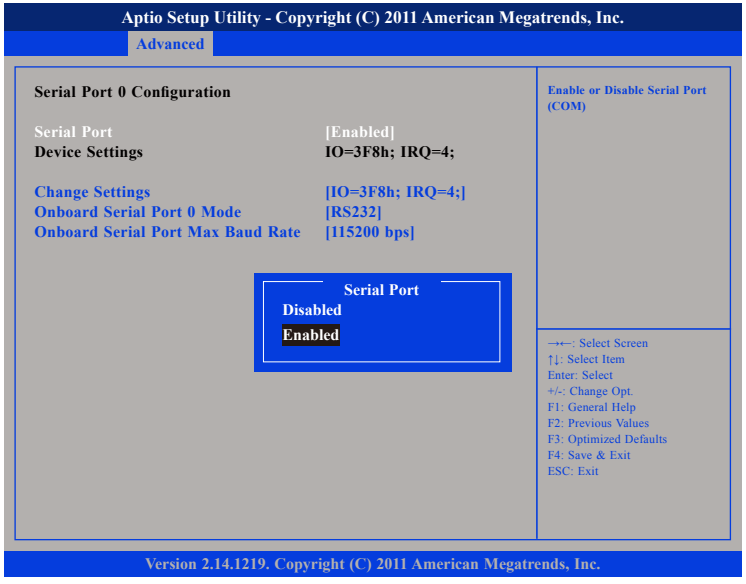
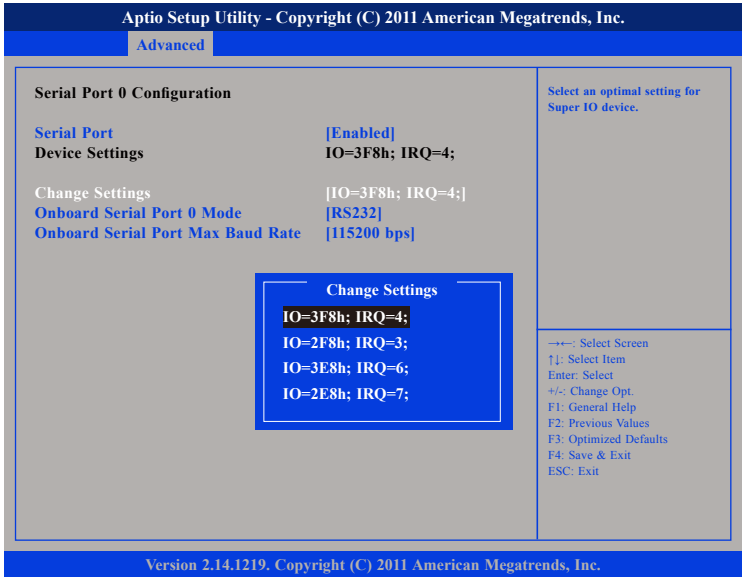
Serial Port



This field is used to enable or disable the serial port.

Change Settings



Selects an optimal setting for the Super IO device.

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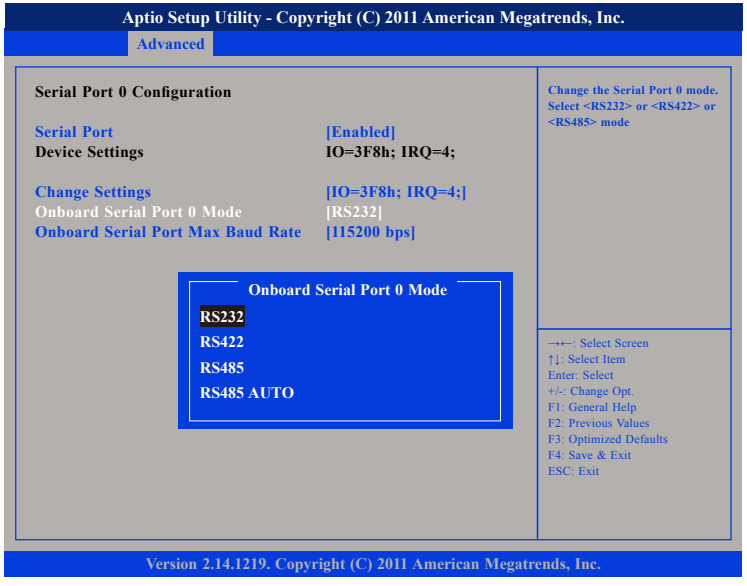
Onboard Serial Port 0 Mode



This field is used to configure the mode of serial port 0 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 0 Configuration
Serial Port [Enabled]
Device Settings IO=3F8h; IRQ=4;
Change Settings [IO=3F8h; IRQ=4;]
Onboard Serial Port 0 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Onboard Serial Port Max Baud Rate
115200 bps
921600 bps
Change the Serial Port Max Baud Rate. Select <115200 bps> or <921600 bps>
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

This field configures the maximum baud rate of serial port 0, the options are 115200 bps and 921600 bps.

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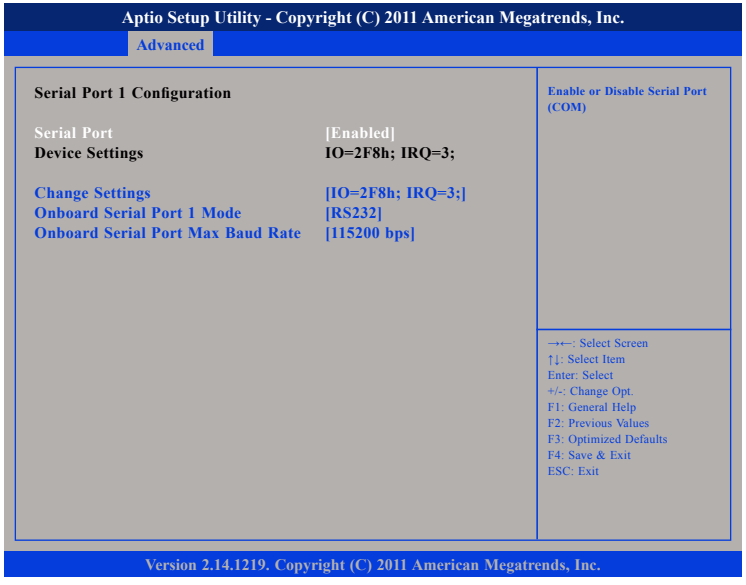
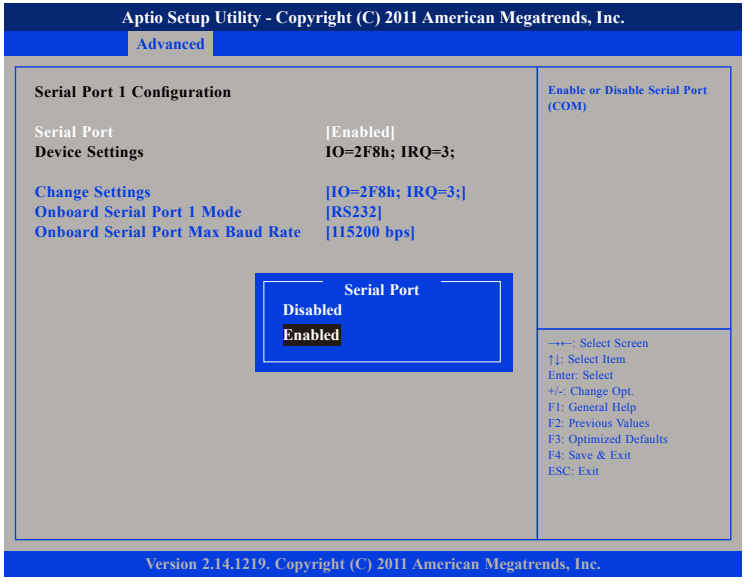
Serial Port 1 Configuration

This section is used to configure serial port 1.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 1 Configuration
Serial Port [Enabled]
Device Settings IO=2F8h; IRQ=3;
Change Settings [IO=2F8h; IRQ=3;]
Onboard Serial Port 1 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Enable or Disable Serial Port (COM)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Serial Port



This field is used to enable or disable the serial port.

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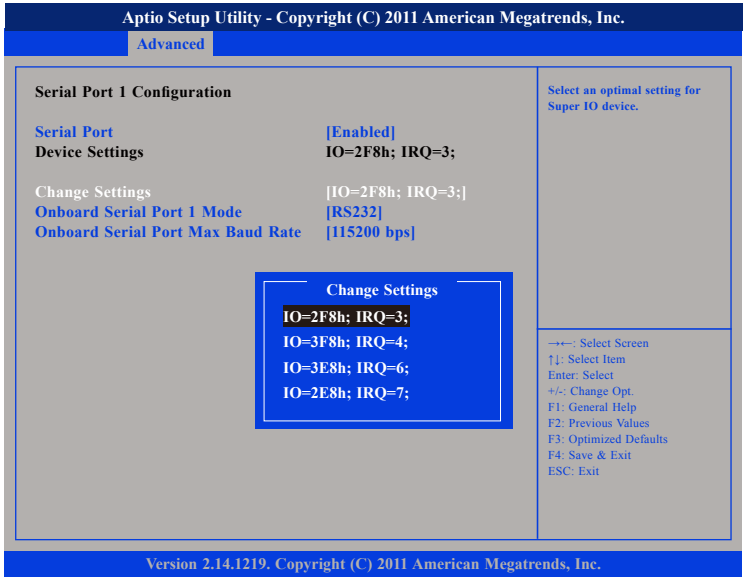
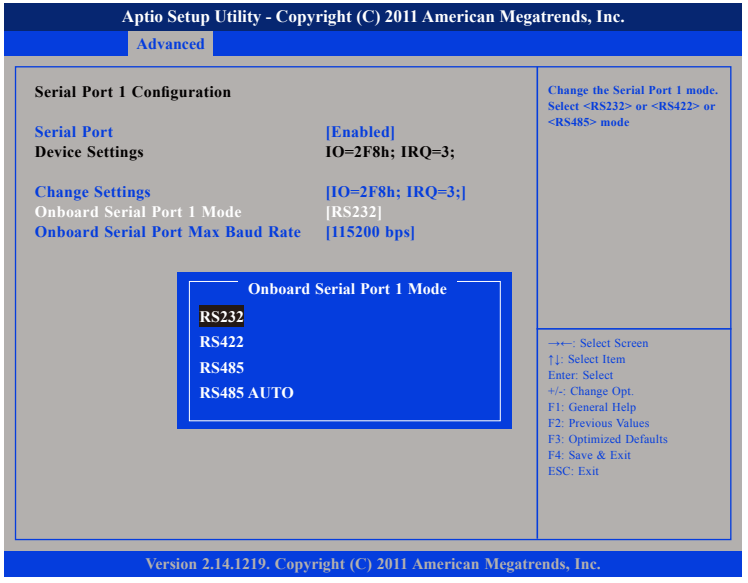
Change Settings



Selects an optimal setting for the Super IO device.

Onboard Serial Port 1 Mode



This field is used to configure the mode of serial port 1 as RS232, RS422, RS485 or RS485 AUTO.

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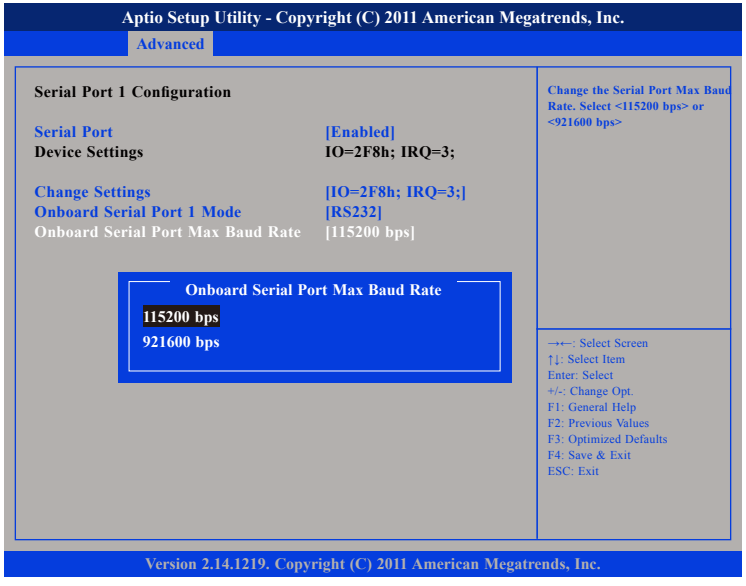
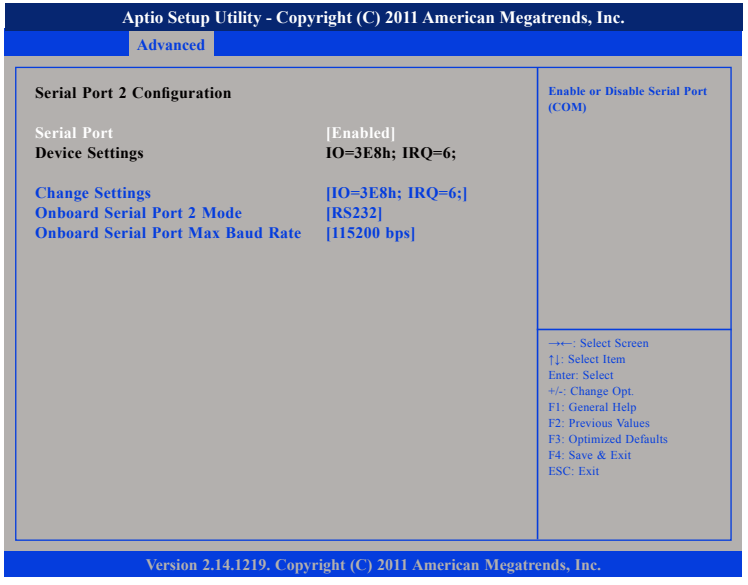
Onboard Serial Port Max Baud Rate


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 1 Configuration
Serial Port [Enabled]
Device Settings IO=2F8h; IRQ=3;
Change Settings [IO=2F8h; IRQ=3;]
Onboard Serial Port 1 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Onboard Serial Port Max Baud Rate
115200 bps
921600 bps
Change the Serial Port Max Baud Rate. Select <115200 bps> or <921600 bps>
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

This field configures the maximum baud rate of serial port 1, the options are 115200 bps and 921600 bps.

Serial Port 2 Configuration

This section is used to configure serial port 2.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 2 Configuration
Serial Port [Enabled]
Device Settings IO=3E8h; IRQ=6;
Change Settings [IO=3E8h; IRQ=6;]
Onboard Serial Port 2 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Enable or Disable Serial Port (COM)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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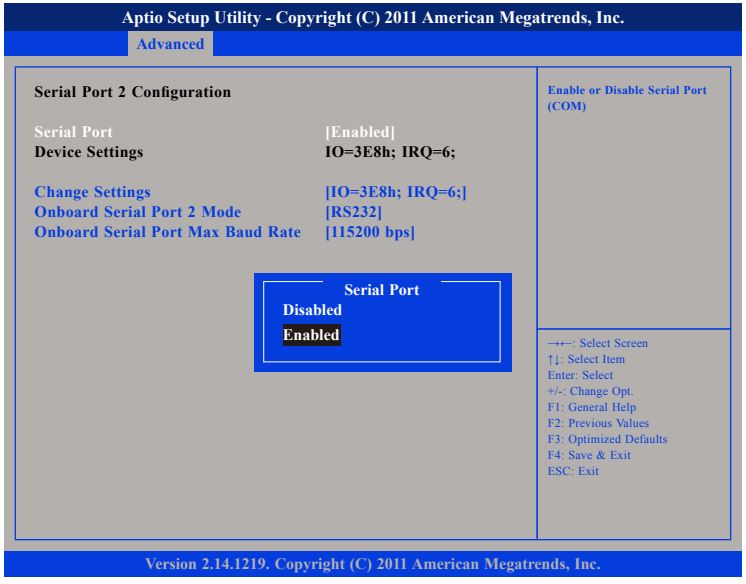
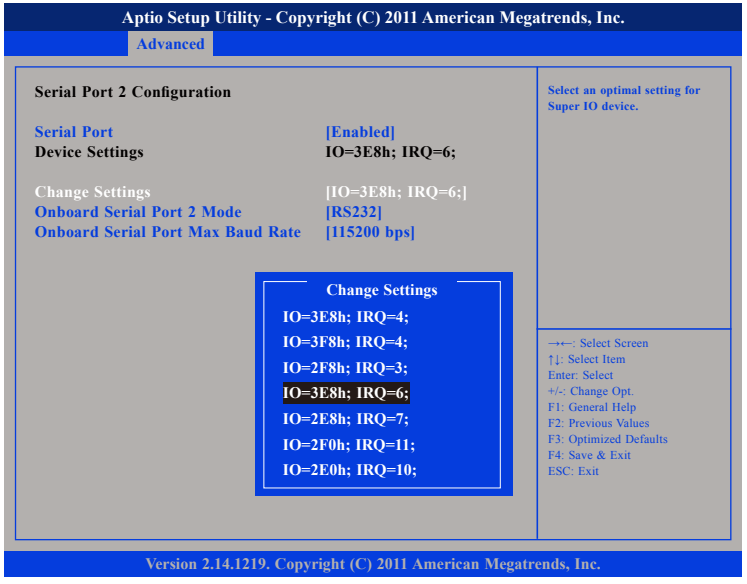
Serial Port



This field is used to enable or disable the serial port.

Change Settings



Selects an optimal setting for the Super IO device.

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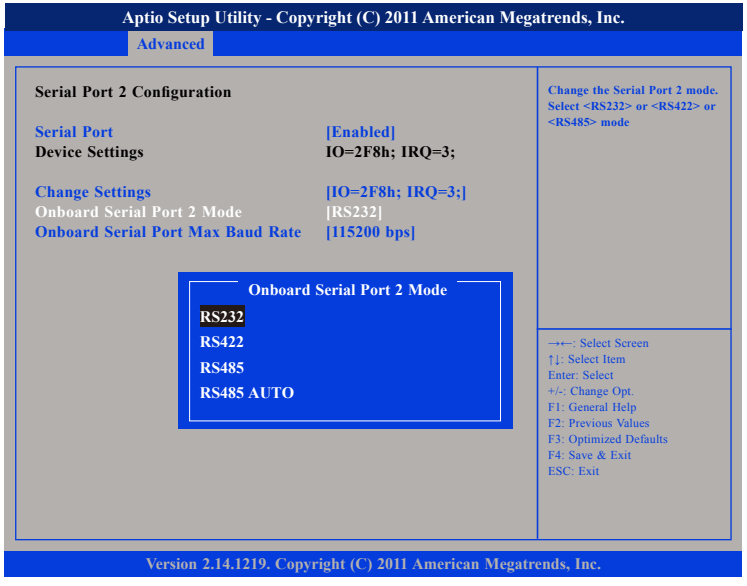
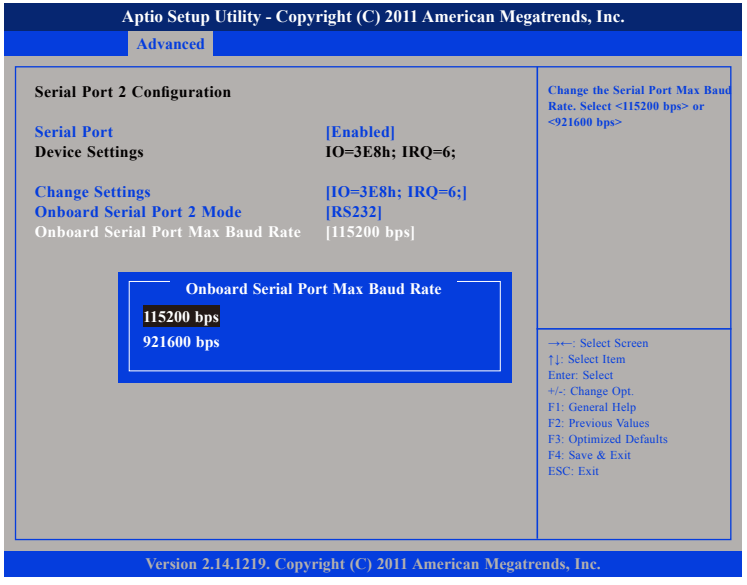
Onboard Serial Port 2 Mode



This field is used to configure the mode of serial port 2 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 2 Configuration
Serial Port [Enabled]
Device Settings IO=3E8h; IRQ=6;
Change Settings [IO=3E8h; IRQ=6;]
Onboard Serial Port 2 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Change the Serial Port Max Baud Rate. Select <115200 bps> or <921600 bps>
Onboard Serial Port Max Baud Rate
115200 bps
921600 bps
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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This field configures the maximum baud rate of serial port 2, the options are 115200 bps and 921600 bps.

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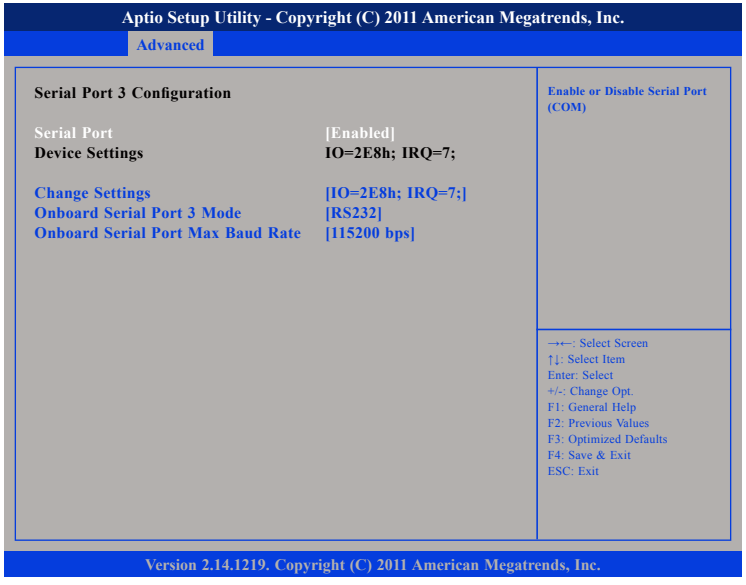
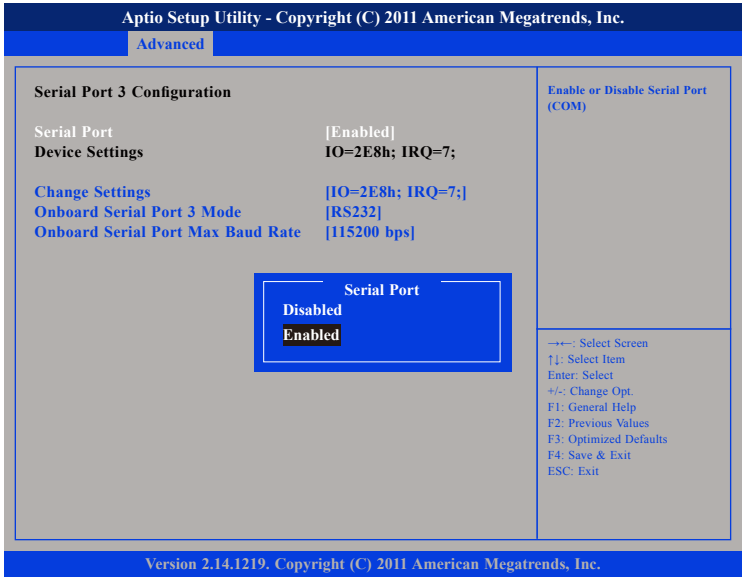
Serial Port 3 Configuration

This section is used to configure serial port 3.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 3 Configuration
Serial Port [Enabled]
Device Settings IO=2E8h; IRQ=7;
Change Settings [IO=2E8h; IRQ=7;]
Onboard Serial Port 3 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Enable or Disable Serial Port (COM)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Serial Port



This field is used to enable or disable the serial port.

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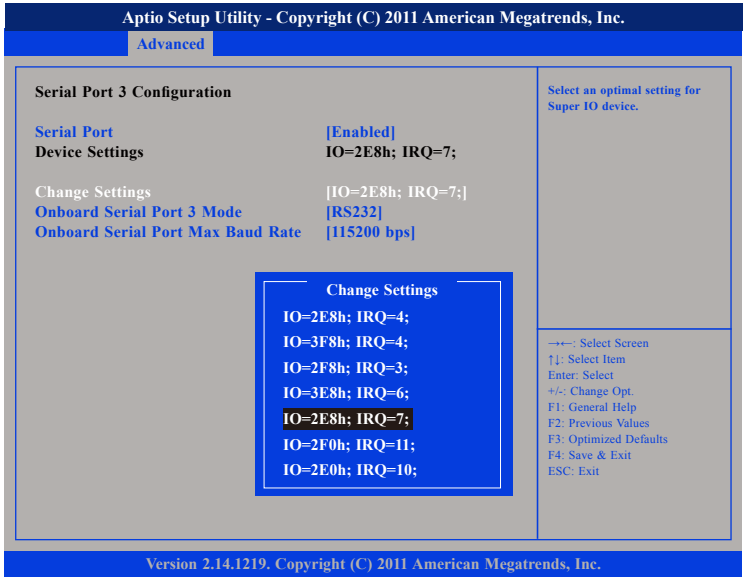
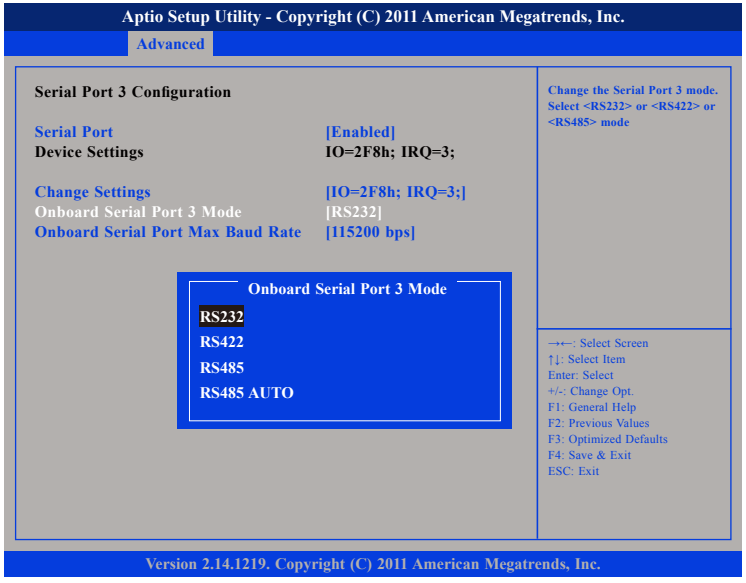
Change Settings



Selects an optimal setting for the Super IO device.

Onboard Serial Port 3 Mode



This field is used to configure the mode of serial port 3 as RS232, RS422, RS485 or RS485 AUTO.

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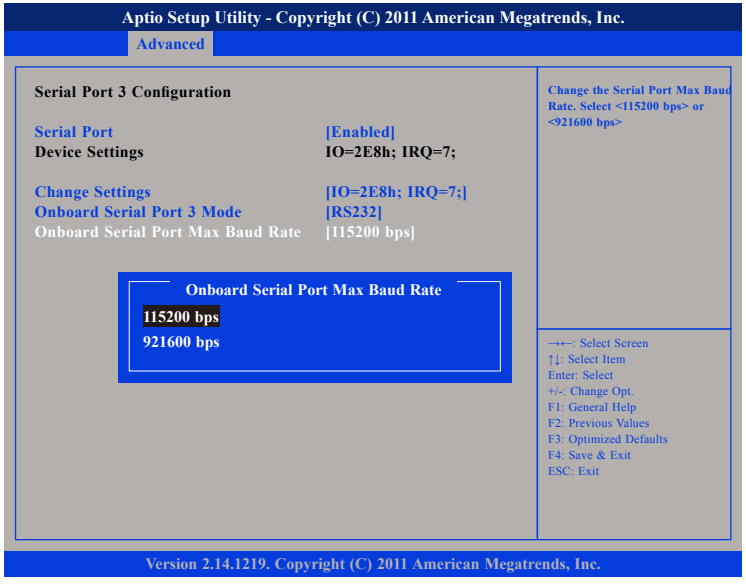
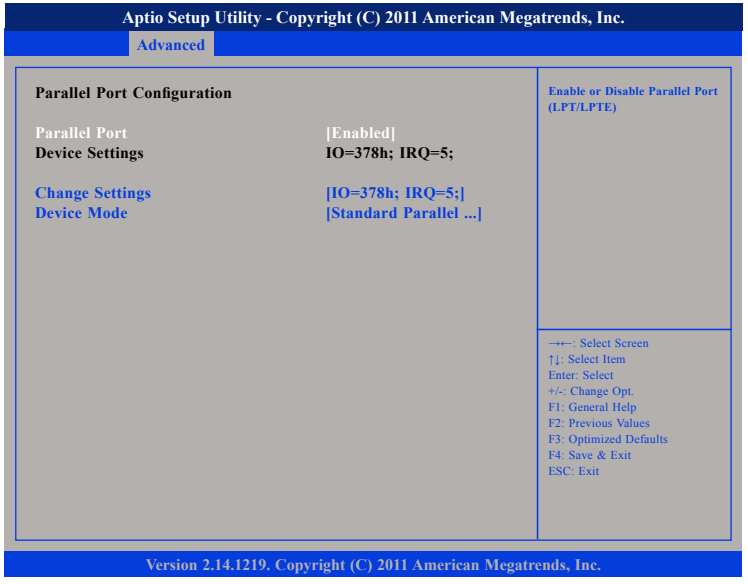
Onboard Serial Port Max Baud Rate


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Serial Port 3 Configuration
Serial Port [Enabled]
Device Settings IO=2E8h; IRQ=7;
Change Settings [IO=2E8h; IRQ=7;]
Onboard Serial Port 3 Mode [RS232]
Onboard Serial Port Max Baud Rate [115200 bps]
Onboard Serial Port Max Baud Rate
115200 bps
921600 bps
Change the Serial Port Max Baud Rate. Select <115200 bps> or <921600 bps>
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

This field configures the maximum baud rate of serial port 3, the options are 115200 bps and 921600 bps.

Parallel Port Configuration

This section is used to configure the parallel port.



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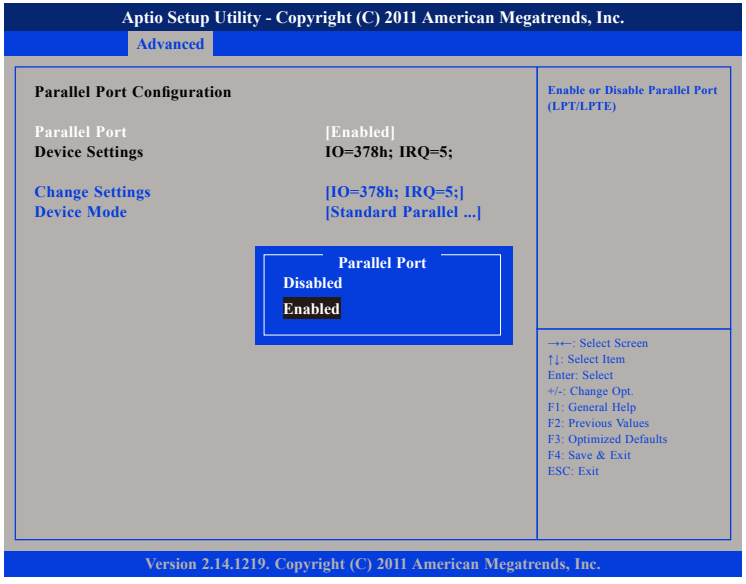
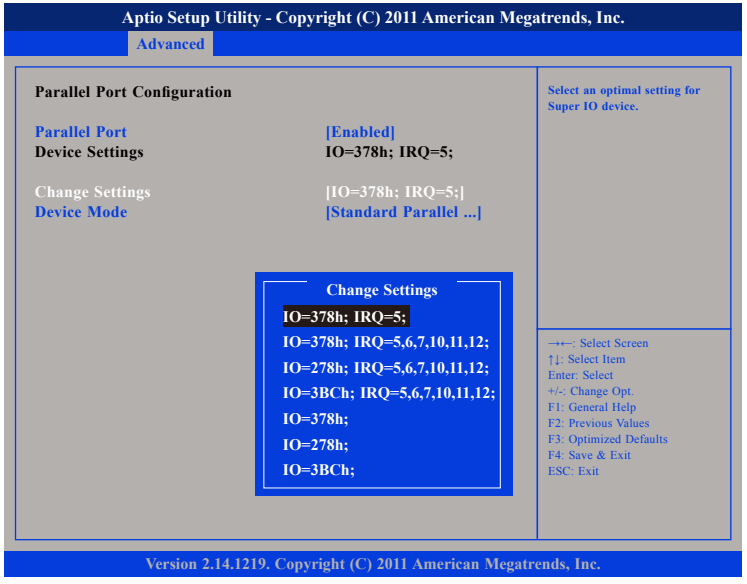
Parallel Port



This field is used to enable or disable the parallel port.

Change Settings



Selects an optimal setting for the Super IO device.

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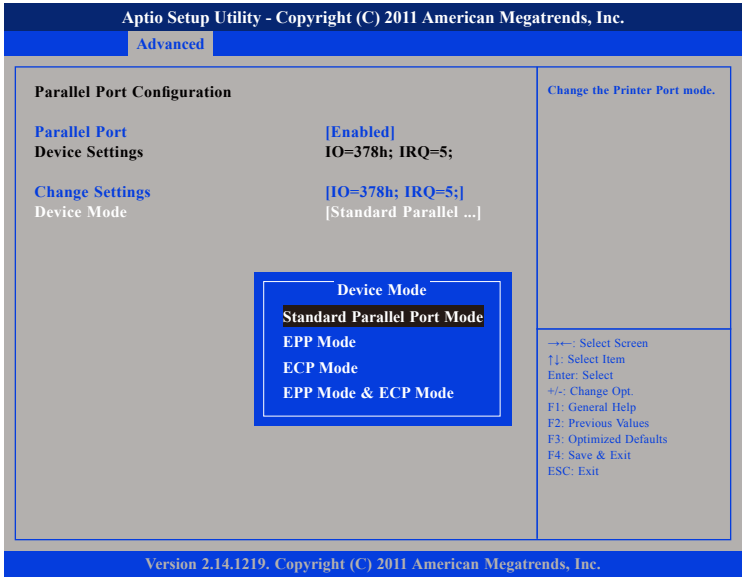
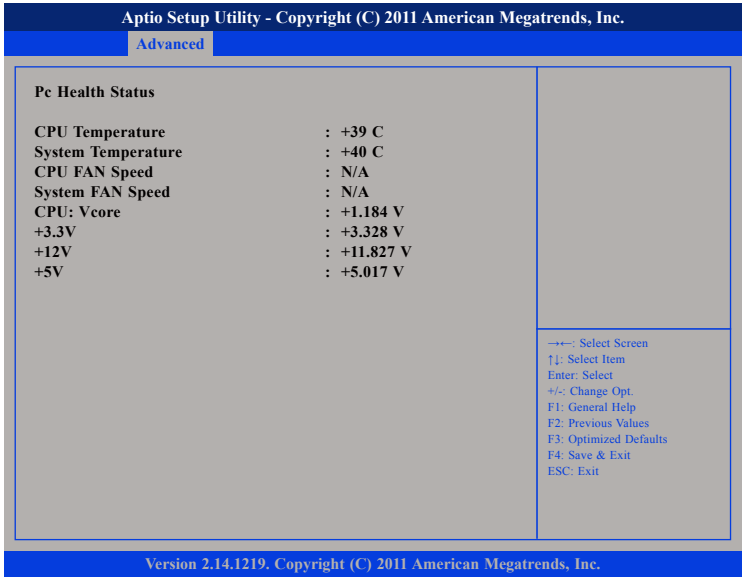
Device Mode



Configures the operating mode of the parallel port, the options are Standard Parallel Port Mode, EPP Mode, ECP Mode and EPP Mode & ECP Mode.

H/W Monitor

This section is used to monitor hardware status such as temperature, fan speed and voltages.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Advanced
Pc Health Status
CPU Temperature : +39 C
System Temperature : +40 C
CPU FAN Speed : N/A
System FAN Speed : N/A
CPU: Vcore : +1.184 V
+3.3V : +3.328 V
+12V : +11.827 V
+5V : +5.017 V
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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CPU Temperature

Detects and displays the current CPU temperature.

System Temperature

Detects and displays the current system temperature.

CPU FAN Speed

Detects and displays the CPU fan speed.

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System Fan Speed
Detects and displays the system fan speed.

CPU: Vcore
Detects and displays the Vcore CPU voltage.

3.3V
Detects and displays 3.3V voltage.

12V
Detects and displays 12V voltage.

5V
Detects and displays 5V voltage.

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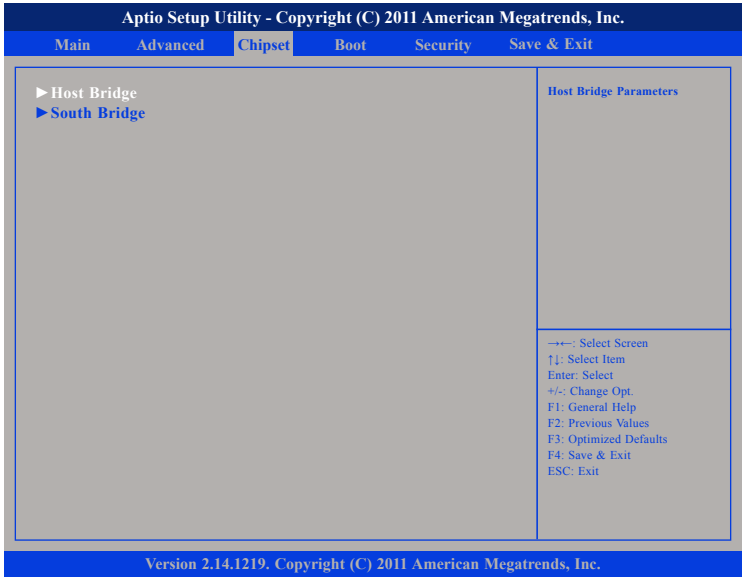
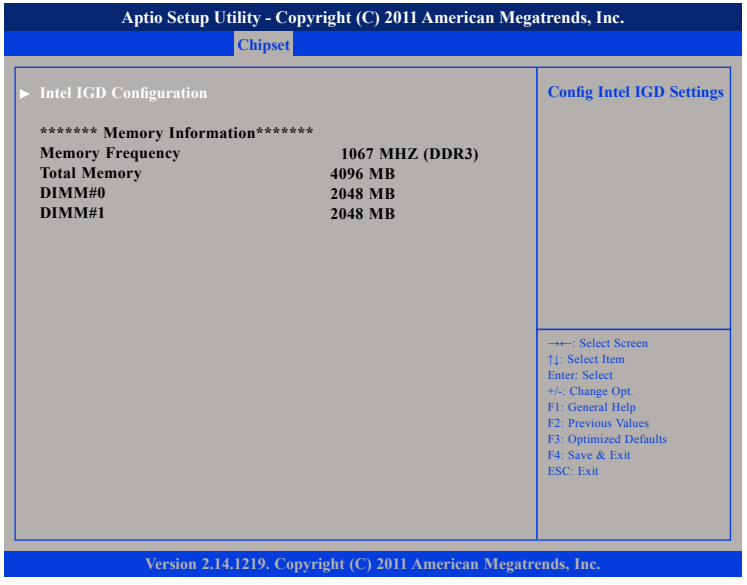
Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.



Host Bridge

Displays the memory information



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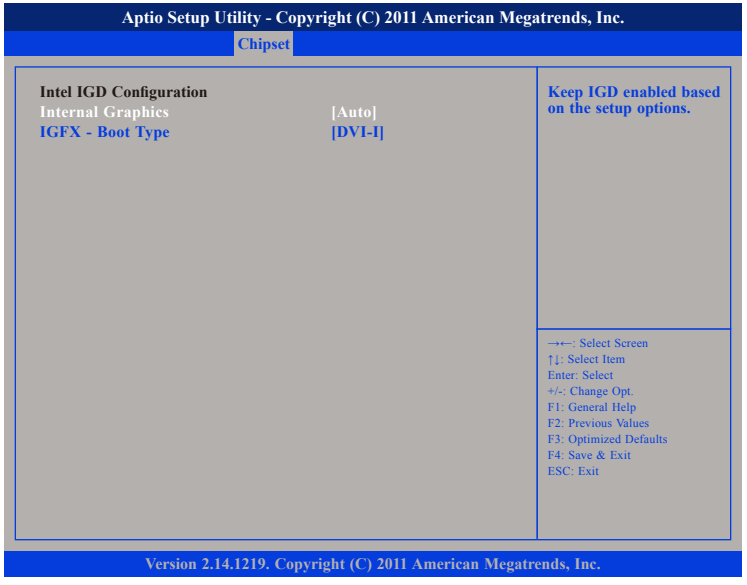
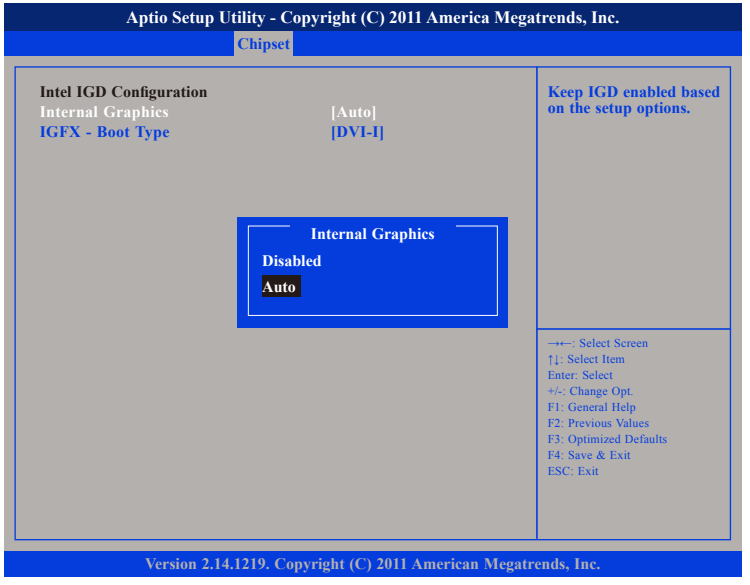
Intel® IGD Configuration

Settings for Intel® IGD.


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Chipset
Intel IGD Configuration
Internal Graphics [Auto]
IGFX - Boot Type [DVI-I]
Keep IGD enabled based on the setup options.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Internal Graphics



This field is used to disable or enable the internal graphics.

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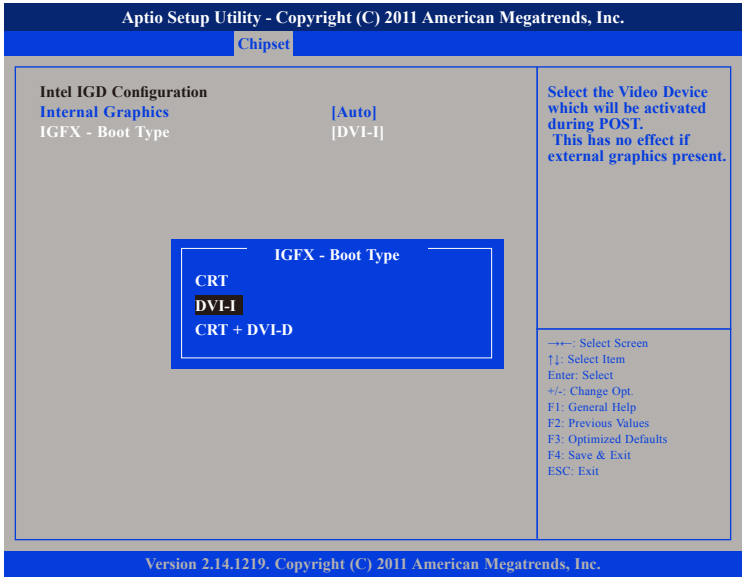
IGFX – Boot Type


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Chipset
Intel IGD Configuration
Internal Graphics [Auto]
IGFX - Boot Type [DVI-I]
Select the Video Device which will be activated during POST. This has no effect if external graphics present.
IGFX - Boot Type
CRT
DVI-I
CRT + DVI-D
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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South Bridge

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Chipset
SB Chipset Configuration
Restore AC Power Loss [Power Off]
Audio Configuration
Azalia HD Audio [Enabled]
▶ USB Configuration
Specify what state to go to when power is re-applied after a power failure (G3 state).
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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This field is used to configure which video device will be activated during POST. This has no effect if external graphics present. The options are CRT, DVI-I, CRT + DVI-D.

Note: Max Resolution

NISE 2200	**NISE 2300**
CRT: 1920 x 1200	CRT: 1920 x 1200
DVI-D: 1920 x 1080	DVI-I: 1920 x 1080
HDMI: 1920 x 1080	DVI-D: 1920 x 1080

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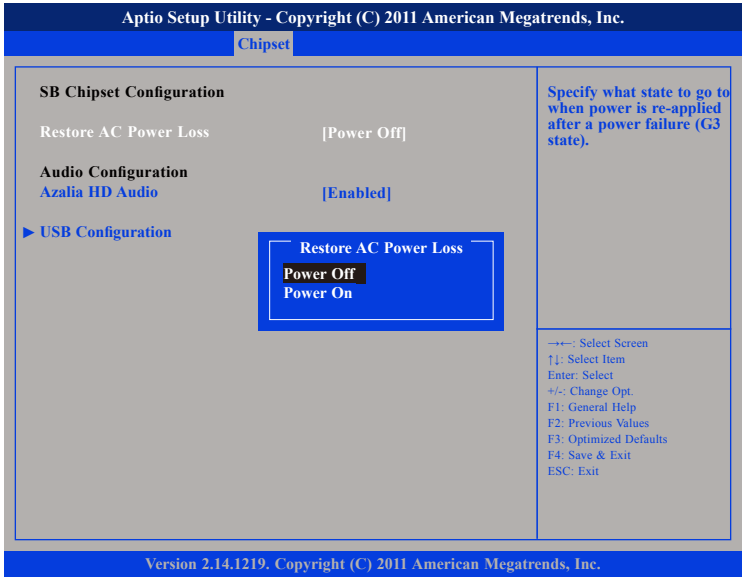
Restore AC Power Loss


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Chipset
SB Chipset Configuration
Restore AC Power Loss [Power Off]
Audio Configuration
Azalia HD Audio [Enabled]
▶ USB Configuration
Restore AC Power Loss
Power Off
Power On
Specify what state to go to when power is re-applied after a power failure (G3 state).
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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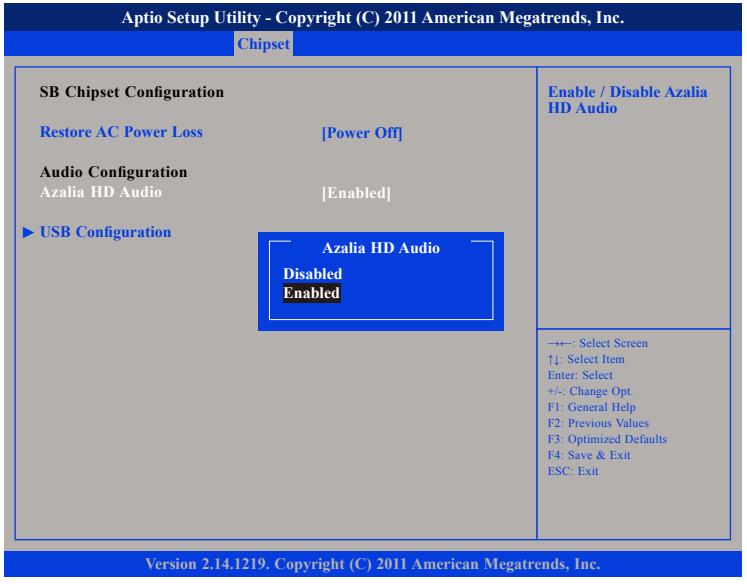
Power Off When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Power On When power returns after an AC power failure, the system will automatically power-on.

Azalia HD Audio



This field is used to enable or disable Azalia HD audio.

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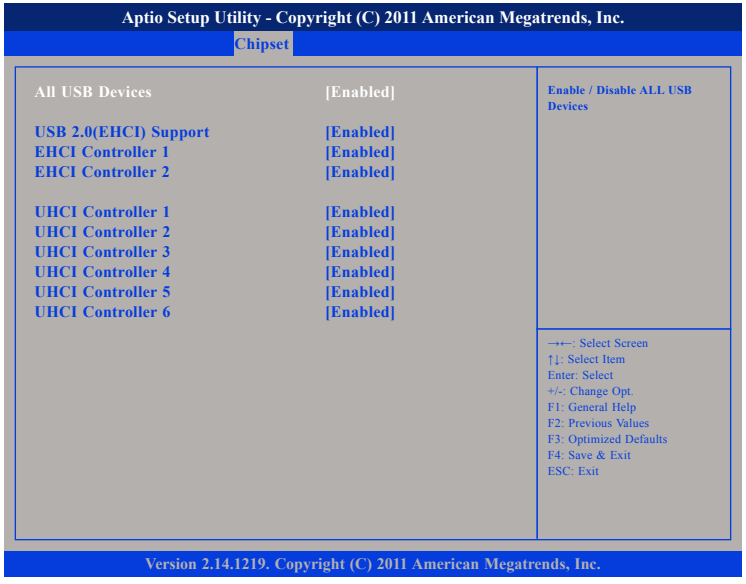
USB Configuration


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Chipset
All USB Devices [Enabled]
USB 2.0(EHCI) Support [Enabled]
EHCI Controller 1 [Enabled]
EHCI Controller 2 [Enabled]
UHCI Controller 1 [Enabled]
UHCI Controller 2 [Enabled]
UHCI Controller 3 [Enabled]
UHCI Controller 4 [Enabled]
UHCI Controller 5 [Enabled]
UHCI Controller 6 [Enabled]
Enable / Disable ALL USB Devices
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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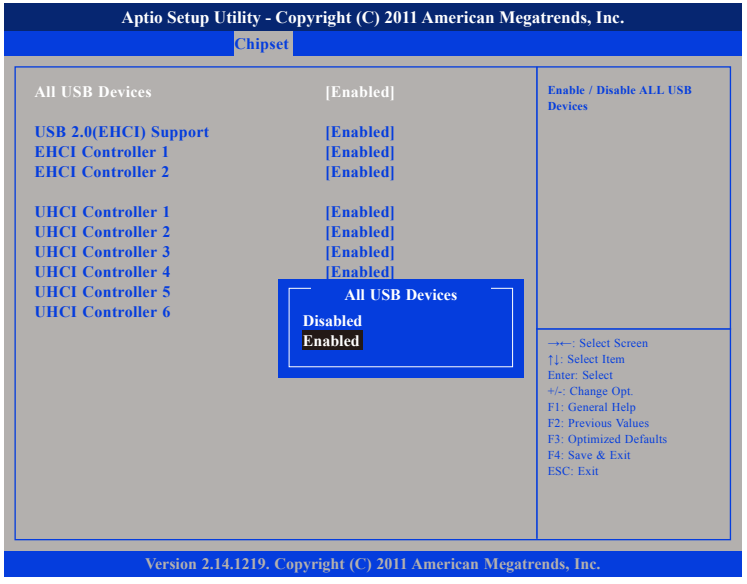
All USB Devices



This field is used to enable or disable all the USB devices.

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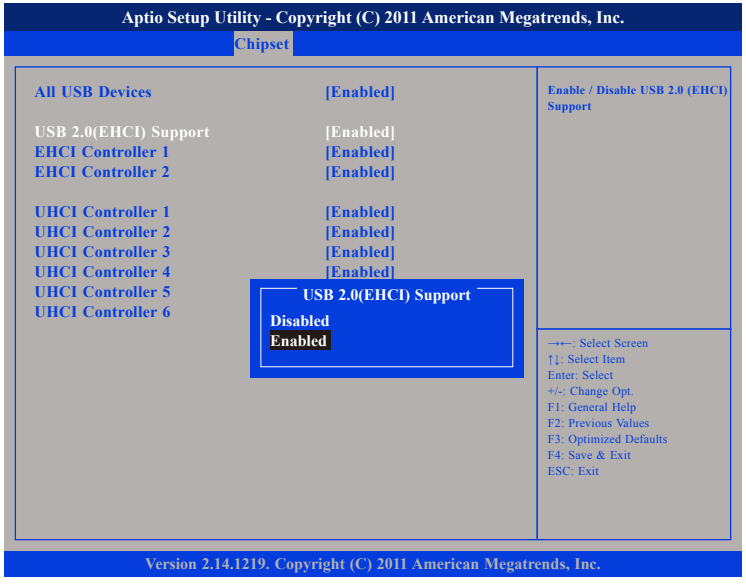
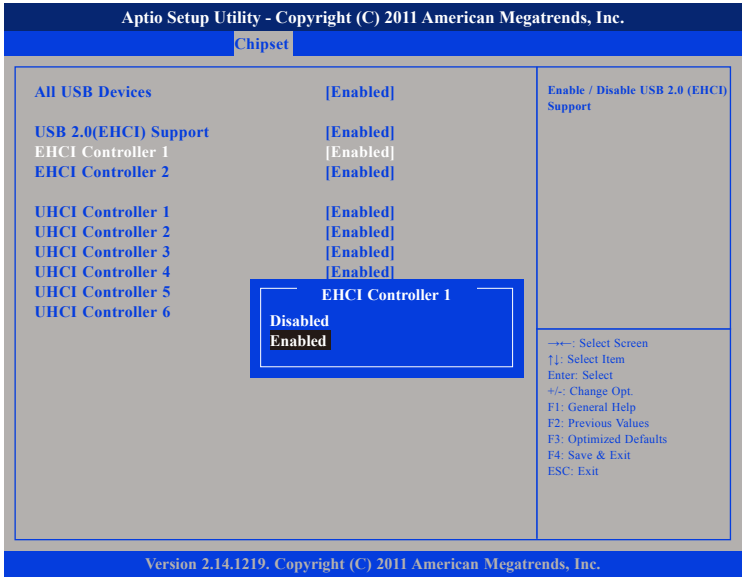
USB 2.0(EHCI) Support



This field is used to enable or disable USB 2.0 (EHCI) support.

EHCI Controller 1 to EHCI Controller 2



These fields are used to enable or disable USB 2.0 (EHCI) support for controller 1 and 2.

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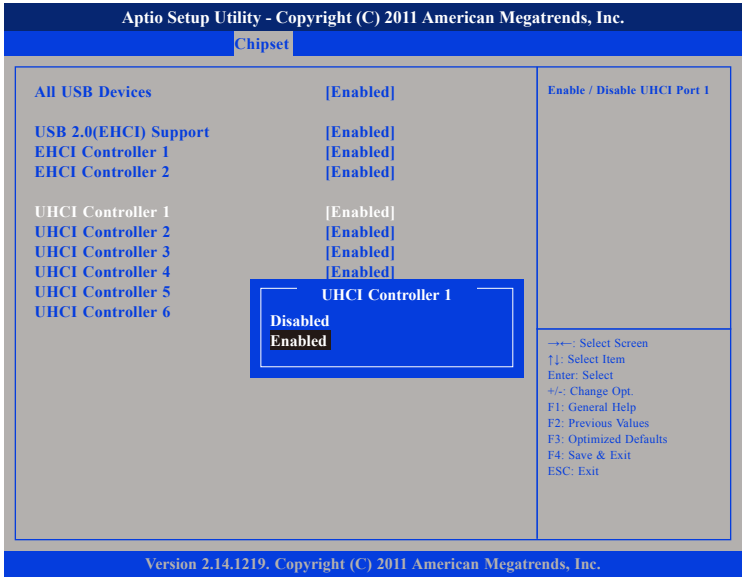
UHCI Controller 1 to UHCI Controller 6



These fields are used to enable or disable UHCI port 1 to port 6.

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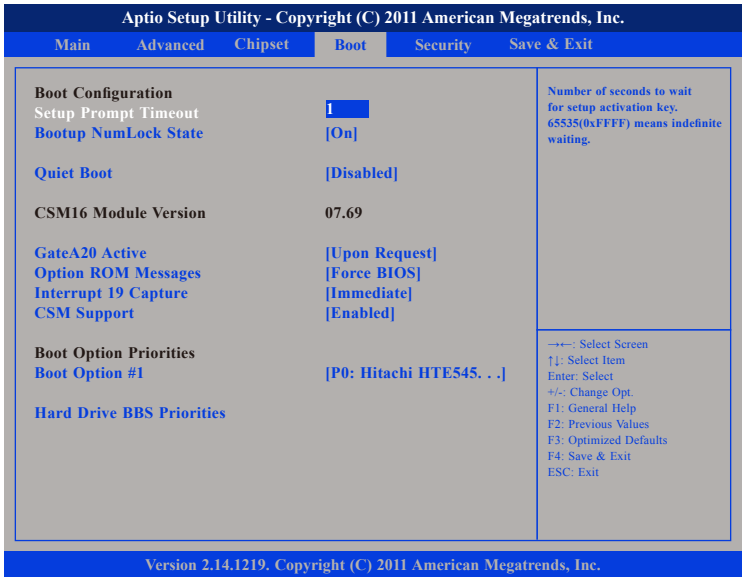
Boot

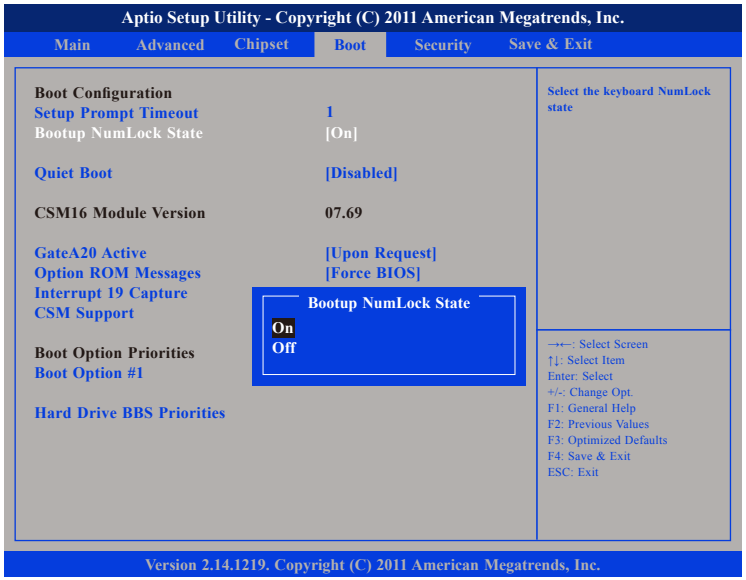
This section is used to configure the boot features.



Setup Prompt Timeout

This section configures the number of seconds to wait for the setup activation key.

Bootup NumLock State



This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

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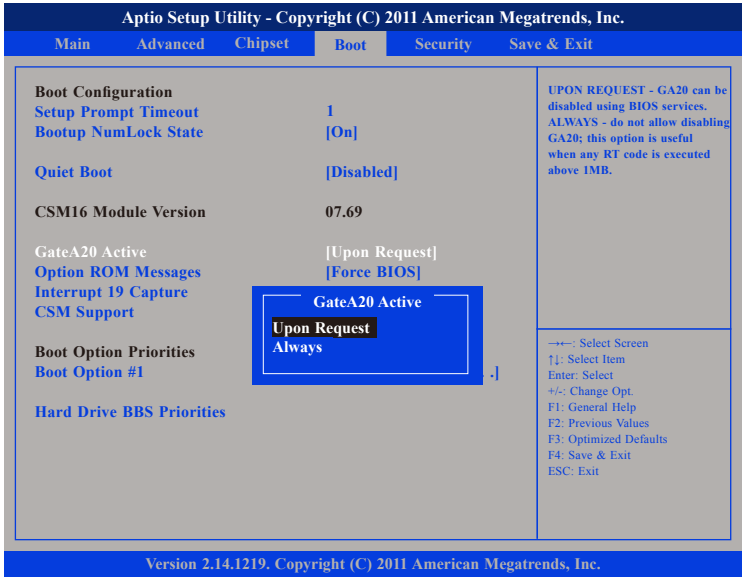
Quiet Boot

Enabled Displays OEM logo instead of the POST messages.
Disabled Displays normal POST messages.

GateA20 Active



Upon Request GA20 can be disabled using BIOS services.
Always Do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

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Option ROM Messages

This field is used to set display mode for Option ROM. The options are Force BIOS and Keep Current.

INT19 Trap Response

Allows Option ROMs to trap Interrupt 19 when enabled.

Immediate	Execute the trap right away.
Postponed	Execute the trap during legacy boot.

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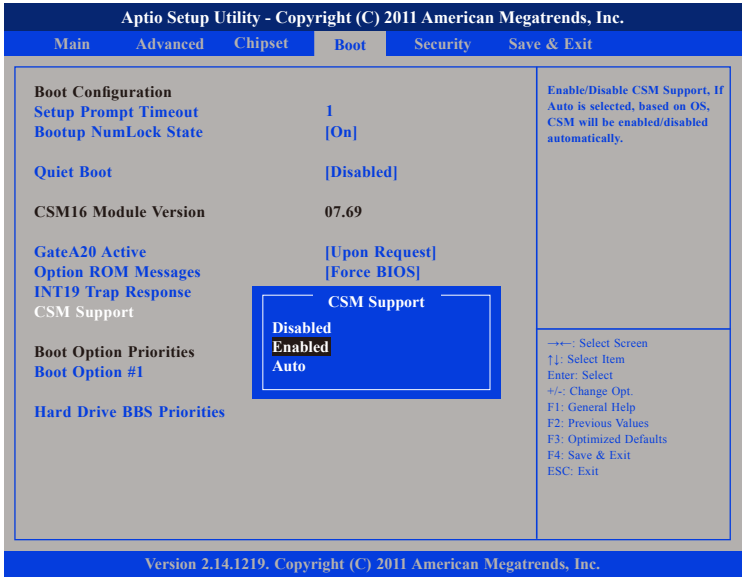
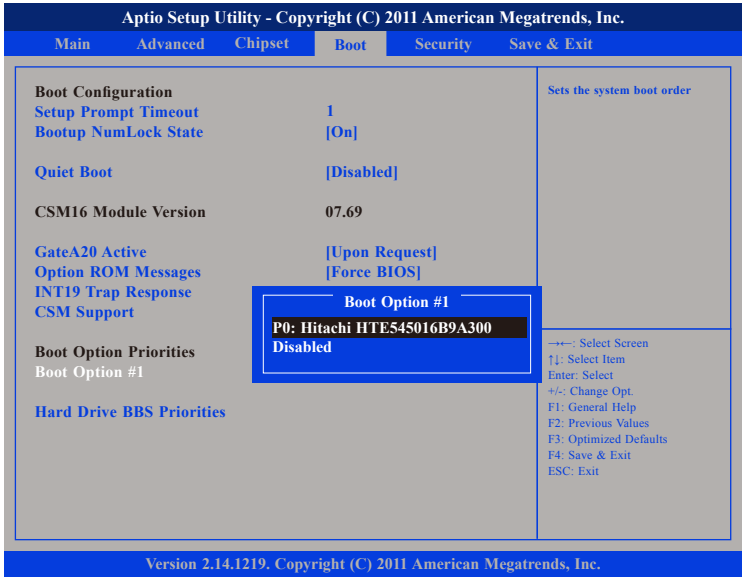
CSM Support



This field is used to enable or disable CSM support, if Auto option is selected, based on OS, CSM will be enabled or disabled automatically.

Boot Option Priorities (Boot Option #1)



This field is used to adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

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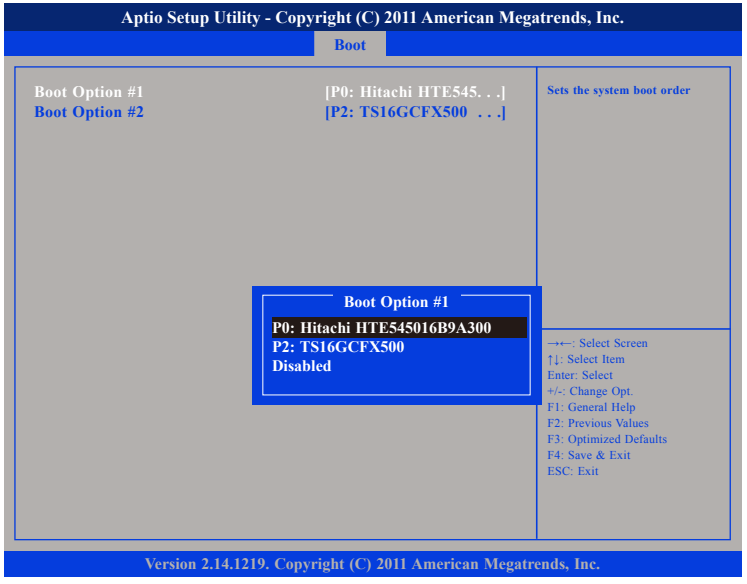
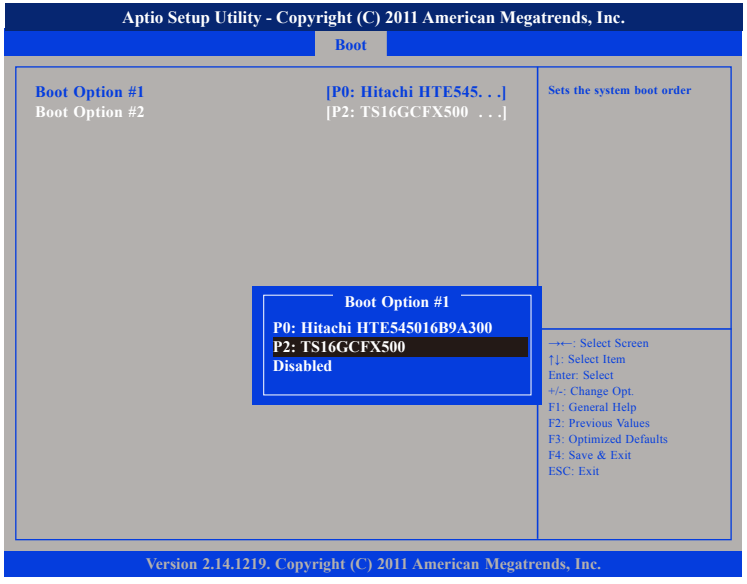
Hard Drive BBS Priorities (Boot Option #1)



Sets the first legacy device to boot from.

Hard Drive BBS Priorities (Boot Option #2)



Sets the second legacy device to boot from.

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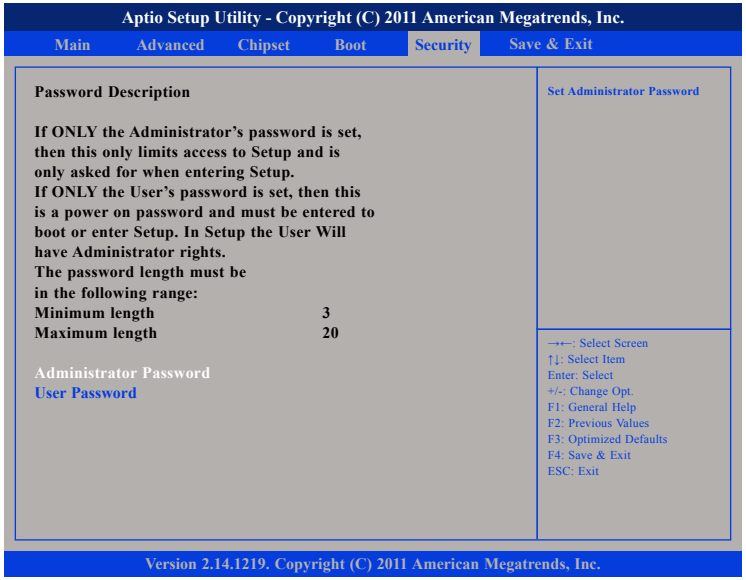
Security


Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main
Advanced
Chipset
Boot
Security
Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User Will have Administrator rights.
The password length must be in the following range:
Minimum length 3
Maximum length 20
Administrator Password
User Password
Set Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Save & Exit

Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Exit

To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

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Save Changes and Reset
To save the changes and reset, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes and Reset
To exit the Setup utility and reboot the system without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting.

Save Changes
To save changes and continue configuring the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes
To discard the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes to discard all changes made and restore the previously saved settings.

Restore Defaults
To restore the BIOS to default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Save as User Defaults
To use the current configurations as user default settings for the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Restore User Defaults
To restore the BIOS to user default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Boot Override
To bypass the boot sequence from the Boot Option List and boot from a particular device, select the desired device and press <Enter>.

Launch EFI Shell from filesystem device
To launch EFI shell from a filesystem device, select this field and press <Enter>.

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Appendix A: GPI/O Programming Guide

Digital I/O (Digital Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the Digital I/O pins in the NISE 2300. The pin definition is shown in the following table:

PIN	Description	PIN	Description
1	+5V	2	GND
3	GPO24	4	GPI20
5	GPO25	6	GPI21
7	GPO26	8	GPI22
9	GPO27	10	GPI23

IO base address : A00h

Bit0 : GPI20
Bit1 : GPI21
Bit2 : GPI22
Bit3 : GPI23
Bit4 : GPO24
Bit5 : GPO25
Bit6 : GPO26
Bit7 : GPO27

1. Read/Write GPIO data by I/O port A04h

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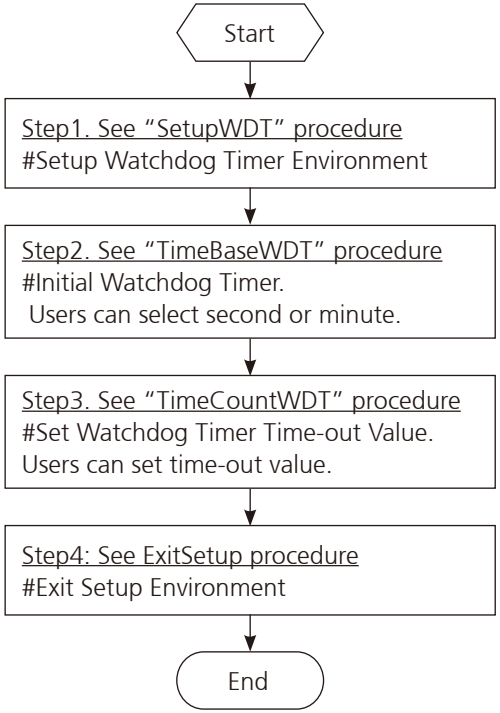
Appendix B: Watchdog Timer

NISE 2300 Watch Dog Function Configuration Sequence Description:



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```
;------------------------------------------------
SetupWDT        PROC
        mov     dx, 2eh
        mov     al, 087h
        out     dx, al
        nop
        nop
        mov     al, 01h
        out     dx, al
        nop
        nop
        mov     al, 55h
        out     dx, al
        nop
        nop
        out     dx, al      ;Write operations to special address port (2E) for
                             entering MB PnP Mode.

        mov     al, 07h
        out     2eh, al
        mov     al, 07h     ;Select logical device for Watch Dog.
        out     2fh, al
        ret
SetupWDT        ENDP

;------------------------------------------------
TimeBaseWDT             PROC
        mov     al, 72h
        out     2eh, al
        mov     al, 10h     ;Set WDT reset upon PWROK
        or      al, 80h     ;Here!! set 80h for second, set 00h for minute
        out     2fh, al
        ret
TimeBaseWDT     ENDP

;------------------------------------------------
TimeCountWDT    PROC
        mov     al, 73h     ;WDT Time-out register.
        out     2eh, al
        mov     al, 03h     ;Here!! Set count 3.
        out     2fh, al
        ret
TimeCountWDT    ENDP

;------------------------------------------------
ExitSetup           PROC
        mov     al, 02h
        out     2eh, al
        mov     al, 02h
        out     2fh, al
        ret
ExitSetup           ENDP
;------------------------------------------------
```

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